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Jnl. of the R.S.A., March

ZEBRA

Zebra Continent

Africa is criss-crossed with zebras. Thousands of them,
from Khartoum to the Cape, lift their heads for a moment
as Fisons scientists pass by, walking, crawling on hands and knees,
driving or whirring along in helicopters. And year by year
African harvests increase in abundance and health.

Africa - it's all in **FISONS** field

Journal of the Royal Society of Arts

NO. 5020 MARCH 1958 VOL. CVI

FORTHCOMING MEETINGS

WEDNESDAY, 26TH FEBRUARY, at 2.30 p.m. FERNHURST LECTURE. '*Gibberellic Acid: A New Plant Hormone Controlling Growth and Flowering*', by P. W. Brian, Sc.D., Ph.D., Head of the Department of Microbiology, Akers Research Laboratories, Imperial Chemical Industries Ltd. T. A. Bennet-Clark, M.A., Ph.D., F.R.S., Professor of Botany, University of London (King's College), in the Chair. (The Lecture will be illustrated by lantern slides.)

THURSDAY, 27TH FEBRUARY, at 5.15 p.m. COMMONWEALTH SECTION. HENRY MORLEY LECTURE. '*The Second Indian Five-Year Plan*', by Geoffrey Tyson, C.I.E., Secretary, The India, Pakistan and Burma Association. Sir Percival Griffiths, C.I.E., in the Chair. (Tea will be served in the Library from 4.30 p.m.)

WEDNESDAY, 5TH MARCH, at 2.30 p.m. '*Land Planning in an Expanding Economy*', by J. R. James, O.B.E., B.A., of the Ministry of Housing and Local Government. Lady Brunner in the Chair. (The Paper will be illustrated by lantern slides.)

THURSDAY, 6TH MARCH, at 5.15 p.m. COMMONWEALTH SECTION. SIR GEORGE BIRDWOOD MEMORIAL LECTURE. '*The Rôle of Women in the Life and Literature of Pakistan*', by Begum Ikramullah. Sir Harold Shoobert, C.I.E., E.D., Secretary, The Pakistan Society, in the Chair. (Tea will be served in the Library from 4.30 p.m.)

MONDAY, 10TH MARCH, at 6 p.m. The first of two CANTOR LECTURES on '*The Geological Survey of Great Britain*', by Sir William Pugh, O.B.E., D.Sc., F.R.S., Director, Geological Survey of Great Britain and Museum of Practical Geology. (The syllabus of Sir William Pugh's lectures, which will be illustrated by lantern slides, was printed on page 142 of the issue of the *Journal* for February.)

WEDNESDAY, 12TH MARCH, at 2.30 p.m. E. FRANKLAND ARMSTRONG MEMORIAL LECTURE. '*World Hunger as a Biochemical Problem*', by N. W. Pirie, F.R.S., Head of the Biochemistry Department, Rothamsted Experimental Station. Sir E. John Russell, O.B.E., F.R.S., in the Chair. (The Lecture will be illustrated by lantern slides.)

FRIDAY, 14TH MARCH, at 7.30 p.m. FILM EVENING. (See programme on page 224.)

MONDAY, 17TH MARCH, at 6 p.m. The second of two CANTOR LECTURES on '*The Geological Survey of Great Britain*', by Sir William Pugh.

TUESDAY, 18TH MARCH, at 5.15 p.m. COMMONWEALTH SECTION. '*The Pastoral Industry of Australia*', by The Honble. F. W. Bulcock, Agricultural Counsellor for Australia in London. Sir Herbert Howard, Secretary, Commonwealth Agricultural Bureaux, in the Chair. (Tea will be served in the Library from 4.30 p.m.)

WEDNESDAY, 19TH MARCH, at 2.30 p.m. TRUEMAN WOOD LECTURE. '*Industrial Power of the Future*', by Sir Christopher Hinton, K.B.E., F.R.S., Managing Director, Industrial Group, United Kingdom Atomic Energy Authority for Engineering and Production. Sir Alfred Bossom, Bt., LL.D., F.R.I.B.A., J.P., M.P., Chairman of Council of the Society, in the Chair.

WEDNESDAY, 26TH MARCH, at 2.30 p.m. FRED COOK MEMORIAL LECTURE. '*Andrea Mantegna*', by Sir Kenneth Clark, K.C.B., Chairman, Arts Council of Great Britain. His Excellency Count Vittorio Zoppi, Italian Ambassador, in the Chair.

Fellows are entitled to attend any of the Society's meetings without tickets (except where otherwise stated), and may also bring two guests. When they cannot accompany their guests, Fellows may give them special passes, books of which can be obtained on application to the Secretary.

FILM EVENING

The fourth and last Film Evening of the present Session will be held at the Society's House on Friday, 14th March, at 7.30 p.m., when the following three films will be shown:

Our Native Shore
Twilight Forest
Test Flight 263

Our Native Shore (29 minutes) is a colour film, produced by the Esso Petroleum Company Ltd., of the coastline of Great Britain and the crafts and callings of those who inhabit it. The film will be introduced by its producer, Mr. Andrew Rice.

Twilight Forest (27 minutes, also a colour film), which was produced by Editorial Film Productions Ltd. in association with and on behalf of Unilever Ltd., presents dramatically the exploitation of the timber in the rain forests of West Africa. The film will be introduced by Mr. L. M. Mitchell, Films Officer, Unilever Ltd.

Test Flight 263 (35 minutes) was produced by R.H.R. Productions Ltd. for the British Petroleum Company and records excitingly as well as informatively the development of high-speed flight, describing not only the technical problems of the design of the aircraft, but also the physiological problems of the pilot who has to navigate it at the extremely high speeds that have been reached to-day. The film will be introduced by its producer, Mr. Ronald Riley.

Tickets are not required for this occasion, and Fellows are invited to bring two guests. Light refreshments will be served in the Library afterwards.

THE ALBERT MEDAL

The Council are now considering the award of the Albert Medal of the Royal Society of Arts for 1958. They therefore invite Fellows of the Society to forward to the Secretary as soon as possible the names of such men of high distinction as they think worthy of this honour. The Medal was struck to reward 'distinguished merit in promoting the Arts, Manufactures and Commerce', and has been awarded in previous years as follows:

1864 Sir Rowland Hill
1865 His Imperial Majesty Napoleon III
1866 Michael Faraday
1867 Sir W. Fothergill Cooke and Sir Charles Wheatstone
1868 Sir Joseph Whitworth
1869 Baron Justus von Liebig
1870 Vicomte Ferdinand de Lesseps
1871 Sir Henry Cole
1872 Sir Henry Bessemer
1873 Michael Eugène Chevreul
1874 Sir C. W. Siemens
1875 Michel Chevalier
1876 Sir George B. Airy
1877 Jean Baptiste Dumas
1878 Sir Wm. G. (afterwards Lord) Armstrong
1879 Sir William Thompson (afterwards Lord Kelvin)
1880 James Prescott Joule
1881 Professor August Wilhelm Hofmann
1882 Louis Pasteur
1883 Sir Joseph Dalton Hooker
1884 Captain James Buchanan Eads
1885 Sir Henry Doulton
1886 Samuel Cunliffe Lister (afterwards Lord Masham)
1887 HER MAJESTY QUEEN VICTORIA
1888 Professor Hermann Louis Helmholtz
1889 John Percy
1890 Sir William Henry Perkin
1891 Sir Frederick Abel, Bt.
1892 Thomas Alva Edison
1893 Sir John Bennet Lawes, Bt., and Sir Henry Gilbert
1894 Sir Joseph (afterwards Lord) Lister
1895 Sir Isaac Lowthian Bell, Bt.
1896 Professor David Edward Hughes
1897 George James Simons
1898 Professor Robert Wilhelm Bunsen
1899 Sir William Crookes
1900 Henry Wilde
1901 HIS MAJESTY KING EDWARD VII
1902 Professor Alexander Graham Bell
1903 Sir Charles Augustus Hartley
1904 Walter Crane
1905 Lord Rayleigh
1906 Sir Joseph Wilson Swan
1907 The Earl of Cromer
1908 Sir James Dewar
1909 Sir Andrew Noble
1910 Madame Curie
1911 The Honble. Sir Charles Algernon Parsons
1912 Lord Strathcona and Mount Royal
1913 HIS MAJESTY KING GEORGE V
1914 Senatore (afterwards Marchese) Guglielmo Marconi
1915 Sir Joseph John Thomson
1916 Professor Elias Metchnikoff
1917 Orville Wright
1918 Sir Richard Tetley Glazebrook
1919 Sir Oliver Joseph Lodge
1920 Professor Albert Abraham Michelson
1921 Sir J. Ambrose Fleming
1922 Sir Dugald Clerk
1923 Major-General Sir David Bruce and Colonel Sir Ronald Ross
1924 H.R.H. THE PRINCE OF WALES
1925 Lieut.-Colonel Sir David Prain
1926 Professor Paul Sabatier
1927 Sir Aston Webb
1928 Sir Ernest (afterwards Lord) Rutherford
1929 Sir J. Alfred Ewing
1930 Professor Henry E. Armstrong
1931 H.R.H. THE DUKE OF CONNAUGHT AND STRATHEARN
1932 Frank (afterwards Sir Frank) Brangwyn
1933 Sir William Llewellyn

1934	Sir Frederick Gowland Hopkins
1935	Sir Robert A. Hadfield, Bt.
1936	The Earl of Derby
1937	Lord (now Viscount) Nuffield
1938	HER MAJESTY QUEEN MARY
1939	Sir Thomas H. Holland
1940	John A. Milne
1941	President Franklin D. Roosevelt
1942	Field-Marshal J. C. Smuts
1943	Sir John Russell
1944	Sir Henry Tizard
1945	Winston (now Sir Winston) Churchill
1946	Sir Alexander Fleming and Sir Howard Florey
1947	Sir Robert Robinson
1948	Sir William Reid Dick
1949	Sir Giles Gilbert Scott
1950	Sir Edward Appleton
1951	HIS MAJESTY KING GEORGE VI
1952	Sir Frank Whittle
1953	Dr. E. D. (now Lord) Adrian
1954	Sir Ambrose Heal
1955	Dr. Vaughan Williams
1956	Sir Henry Dale
1957	Sir Christopher Hinton

MEETING OF COUNCIL

A meeting of Council was held on Monday, 10th February, 1958. Present: Sir Alfred Bossom (in the Chair); Mrs. Mary Adams; Dr. W. Greenhouse Allt; The Honble. G. C. H. Chubb; Sir Edward Crowe; Mr. Robin Darwin; Mr. P. A. Le Neve Foster; Sir Ernest Goodale; The Earl of Halsbury; Mr. A. C. Hartley; Dr. R. W. Holland; Lord Latham; Mr. O. P. Milne; Lord Nathan; The Earl of Radnor; Mr. A. R. N. Roberts; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Dr. L. Dudley Stamp; Sir Stephen Tallents; Mr. G. E. Tonge; Mr. Hugh A. Warren and Sir Griffith Williams; with Dr. K. W. Luckhurst (Secretary); Mr. G. E. Mercer (Deputy Secretary) and Mr. J. S. Skidmore (Assistant Secretary).

ELECTIONS

The following candidates were duly elected Fellows of the Society:

Bailey, John William, M.I.E.E., London.
Barnes, Albert Thomas, Bedford.
Bradley, Kenneth Granville, C.M.G., London.
Beddington, Miss Nadine Dagmar, A.R.I.B.A., London.
Cochlin, Maurice Reginald, London.
Cureton, Basil George Alfred, Leeds.
D'Albiac, Air Marshal Sir John, K.C.V.O., K.B.E., C.B., D.S.O., Beaconsfield, Bucks.
de Azevedo, Carlos, M.A., Lisbon, Portugal.
de Valois, Dame Ninette, D.B.E., London.
Deans, James Robert, A.I.B., London.
Gould, Lieut.-Colonel Ernest Clement, M.A., Bushey, Herts.
Hannen, Nigel Methuen Beau, B.A., London.
Happé, Alfred William Eugène, Pinner, Middx.
Holinski, Alfred de H., M.A., London.
Laurence, Admiral Sir Noel Frank, K.C.B., D.S.O., Weybridge, Surrey.
Lloyd, Major-General Cyril, C.B., C.B.E., T.D., Horsham, Sussex.
Lockwood, Peter Russell, Barnwood, Glos.

Maccabe, Mrs. Gladys Moore, Belfast, N. Ireland.
Macnab Roy Martin, London.
Mann, Marshall Douglas, B.A., A.M.I.M.M., Essexvale, S. Rhodesia.
Norris, Gerald Chad, B.A., Ph.D., Obuasi, Ghana.
Pierce, Sydney David, O.B.E., London.
Poole, John Malcolm, Altrincham, Cheshire.
Rees, Francis David, M.B.E., M.M., Baynards, Sussex.
Russell, Donald George Shefford, O.B.E., Broadway, Worcs.
Seymour, Richard, C.B.E., London.
Shuttleworth, Jack, Bradford, Yorks.
Walley, Miss Joan Elizabeth, B.Sc., London.
Watson, Herbert Geoffrey, Cheltenham, Glos.
Winspear, Francis George, F.C.A., R.I.A., LL.D., Edmonton, Alberta, Canada.

VACANCY ON COUNCIL

Mr. John Gloag was appointed to fill the vacancy on the Council created by the death of Sir Herman Lebus.

REGENT'S PARK TERRACES

A further letter from the Commissioners for the Crown Estates, regarding the future of the Regent's Park Terraces, was reported.

ALBERT MEDAL

Preliminary consideration was given to the 1958 award.

OTHER BUSINESS

A quantity of financial and other business was transacted.

SPECIAL GENERAL MEETING

At a Special General Meeting held at the Society's House on Monday, 10th February, the Resolution relating to the proposed mortgage of the Society's premises, which was printed on page 143 of the last issue of the *Journal*, was approved and adopted.

INDUSTRIAL ART BURSARIES COMPETITIONS

1957 COMPETITION

At the request of the Council, the Industrial Art Bursaries Board again organized a competition in 1957, and Bursaries, in most cases of £150 each, were offered in 17 different sections. These covered the following subjects: acrylic sheet ('Perspex'); carpets; domestic electrical appliances; domestic solid-fuel-burning appliances; dress textiles; electric-light fittings; film, stage and television settings; footwear; furnishing textiles; furniture; jewellery; laminated plastics; packaging; pottery; typography; wall-paper, and women's fashion wear (in this section two awards, of £200 and £150 respectively, were offered under the Bianca Mosca Memorial Trust). The Sir Frank Warner Memorial Medal was also offered for the best design in the carpet, dress textiles, and furnishing textiles sections.

The competition was open* to full-time or part-time students, between the ages of 17 and 30, of art, architectural, technical or other colleges or schools approved by the Society. In certain sections eligibility was extended to include young draughtsmen, clerks or other similar persons engaged in industry, whether or not they had had any previous art school training, provided that they were recommended as having sufficient ability to compete in a national competition by a responsible officer of the industry concerned. In all, 423 candidates from seventy schools and industrial establishments entered the competition; this compares with 412 candidates in 1956, 330 in 1955, and 292 in 1954, in which years the numbers of schools and industrial establishments represented were 70, 66, and 63 respectively.

Candidates were required both to undergo a set test, carried out under invigilation, and to submit examples of work, chosen from the work done by them in the ordinary course of their studies.

As in the past, the Council's purpose in arranging the competition was to enable successful candidates to broaden their knowledge and experience by travel abroad and the study of foreign design, or in certain cases to obtain art training or industrial experience in this country. The success of the tours made by Bursary winners depends largely upon their meeting manufacturers and industrial designers in the countries visited, and in past years many people in this country have kindly given assistance by providing helpful introductions. In this connection the Bursaries Board would be grateful to hear from Fellows who may be able to help these students when the latter are abroad.

The Council desire to express their thanks to all those who have assisted and advised in the conduct of the competitions: particularly to the firms, organizations and individuals who generously subscribed towards the cost of the Bursaries, to the Juries for their voluntary services, and to the heads of organizations submitting candidates for their co-operation.

* Special conditions applied to the women's fashion section.

Awards

The Council, adopting the recommendations of the Industrial Art Bursaries Board based on the reports of the Juries, have awarded 26 Bursaries amounting in value to £3,050. The following awards and commendations have been made in connection with 16 of the 17 sections included in the competition. No awards were made in the wall-paper section.

DOMESTIC ELECTRICAL APPLIANCES

Bursary (£150): *Miss P. V. Gibbs** (L.C.C. Central School of Arts and Crafts: age 19)

Commended: *Mr. P. J. Collins* (L.C.C. Central School of Arts and Crafts: age 19)

ELECTRIC LIGHT FITTINGS

Bursary (£150): *Mr. R. G. Wilkes** (Kingston-upon-Thames School of Art: age 18)

Commended: *Mr. R. G. H. Callan* (L.C.C. Camberwell School of Arts and Crafts: age 25)

DOMESTIC SOLID-FUEL-BURNING APPLIANCES

Bursary (£150): *Mr. J. D. Payne* (Messrs. Allen-Bowden Ltd., formerly at the Birmingham College of Art and Crafts: age 23)

Commended: *Mr. R. E. N. Sandberg* (L.C.C. Central School of Arts and Crafts: age 21)

CARPETS

Bursaries: *Miss J. Tee* (Messrs. John Crossley & Sons Ltd., formerly at the L.C.C. Central School of Arts and Crafts: age 24) and *Mr. F. A. Whitehead** (Salford Royal Technical College School of Art: age 17) £75 *each*

Commended: *Mr. J. R. Brown* (Kidderminster College of Further Education: age 19) and *Mr. M. A. Heggie* (Glasgow School of Art: age 23)

DRESS TEXTILES

Bursaries: *Mr. D. H. Brown** (Scottish Woollen Technical College: age 20) and *Miss S. Chalmers** (Liverpool College of Art: age 20) £150 *each*

Commended: *Miss G. A. Carmichael* (Liverpool College of Art: age 19); *Miss J. C. Crozier* (Manchester Regional College of Art: age 18); *Miss J. M. Hart* (Brighton College of Art and Crafts: age 20); *Miss A. C. Hillman* (Brighton College of Art and Crafts: age 20); *Miss P. A. Lord* (Blackpool Technical College and School of Art: age 18) and *Mr. F. Whitehead* (Leicester College of Art: age 20)

FURNISHING TEXTILES

Commended: *Mr. P. Ashton* (Manchester Regional College of Art: age 21) and *Mr. R. W. Dodd* (Royal College of Art: age 23)

* Also awarded Associate Membership of the Society.

WOMEN'S FASHION WEAR

*Bianca Mosca Awards: Miss S. Tuffin** (South-West Essex Technical College and School of Art: age 19) and *Miss A. C. White* (Royal College of Art: age 21) £100 *each. Miss P. F. Billing** (Kingston-upon-Thames School of Art: age 19) and *Mr. J. R. M. Lachlan* (Royal College of Art: age 24) £75 *each*

Commended: Miss J. M. Checkley (Royal College of Art: age 19); *Mr. G. F. Smith* (Royal College of Art: age 19); *Mr. P. W. Sumner* (Royal College of Art: age 22) and *Miss M. A. Thorpe* (Royal College of Art: age 23)

ACRYLIC SHEET ('PERSPEX')

Bursary (£150): *Mr. P. Johnson** (Birmingham College of Art and Crafts: age 19)

Commended: Mr. R. E. Facius (L.C.C. Central School of Arts and Crafts: age 26)

LAMINATED PLASTICS

Bursary (£150): *Miss S. C. Turnbull** (Carlisle College of Art: age 19)

Commended: Mr. D. A. Bartlett (Kingston-upon-Thames School of Art: age 17); *Miss H. E. A. Porter* (Carlisle College of Art: age 19); *Mr. F. Whitehead* (Leicester College of Art: age 20) and *Miss M. Y. Wilkinson* (Carlisle College of Art: age 18)

FILM, STAGE AND TELEVISION SETTINGS

Bursaries: Mr. D. L. Burrows (Royal College of Art: age 24); *Mr. C. Howard* (Royal College of Art: age 22) and *Mr. A. L. Powell* (L.C.C. Central School of Arts and Crafts: age 22) £150 *each*

Commended: Mr. C. J. Arthur (Wimbledon School of Art: age 20); *Mr. M. J. Davies* (Royal College of Art: age 24); *Mr. D. P. Dodd* (Medway College of Art: age 20) and *Mr. D. Marshall* (Birmingham College of Art and Crafts: age 24)

FOOTWEAR

*Bursaries: Miss J. Harris** (West Sussex College of Art and Crafts: age 19) and *Mr. E. Lunn** (Northampton School of Art: age 19) £75 *each*

FURNITURE

*Bursaries: Mr. R. Baker** (L.C.C. Hammersmith School of Building and Arts and Crafts: age 18); *Mr. J. B. L. Strange** (High Wycombe College of Further Education: age 20); *Mr. J. D. A. Tucker** (High Wycombe College of Further Education: age 20) and *Mr. R. Tucker** (High Wycombe College of Further Education: age 19) £75 *each*

Commended: Mr. P. A. Cocks (High Wycombe College of Further Education: age 18) and *Mr. A. H. Tilbury* (Royal College of Art: age 22)

* Also awarded Associate Membership of the Society.

JEWELLERY

Bursary (£150): *Miss E. A. Proctor,* Des.R.C.A. (Leeds College of Art: age 24)

Commended: Miss L. Farmar-Bowers (Kingston-upon-Thames School of Art: age 18) and *Mr. R. S. Johnston* (L.C.C. Central School of Arts and Crafts: age 24)

PACKAGING

Bursary (£150): *Mr. J. E. Barnes** (Leicester College of Art: age 20)

Commended: Mr. S. Bernstein (Salford Royal Technical College School of Art: age 20); *Mr. S. Scott* (Salford Royal Technical College School of Art: age 20) and *Mr. P. O. Smythe* (Royal College of Art: age 24)

POTTERY

Bursary (£150): *Miss H. J. Elliot** (Stoke-on-Trent College of Art: age 19)

TYPOGRAPHY

Bursary (£150): *Mr. D. I. Martin** (Leicester College of Art: age 18)

Commended: Mr. R. H. Broughton (Leicester College of Art: age 19)

The Sir Frank Warner Memorial Medal: Mr. F. Whitehead (Leicester College of Art: age 20)

Publication of Report

Full details of the 1957 competition will be contained in the annual report on the competition which will be published, together with the particulars of the next competition, in May. This report will contain particulars of the tests set in each section, the names of the winning and commended candidates, the reports and composition of the Juries, and a summary of the uses made of Bursaries in 1957 by previous Bursary winners. Illustrations of many of the winning designs, a number of which are reproduced on the following pages, will also be included.

Exhibition

An exhibition of the winning and commended designs submitted in the competition will be held at the Royal Society of Arts during the three weeks preceding Whitsun. Further details will be announced in the *Journal* in due course.

1958 COMPETITION

The Council have decided to hold a further competition in 1958, which will be organized on the same lines as that in 1957. Particulars of this competition will, as stated above, be published in May, and the list of sections to be included will be announced in the June issue of the *Journal.*

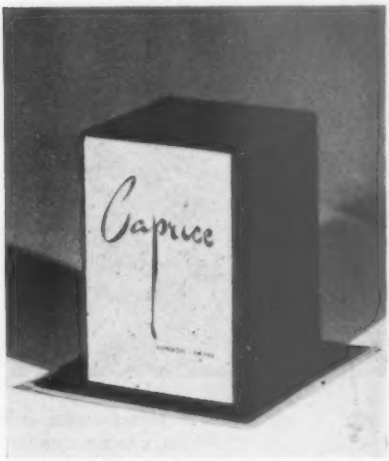
* Also awarded Associate Membership of the Society.

SOME OF THE DESIGNS

All the designs reproduced in these pages were submitted for the set tests. The captions are taken from the students' own descriptions

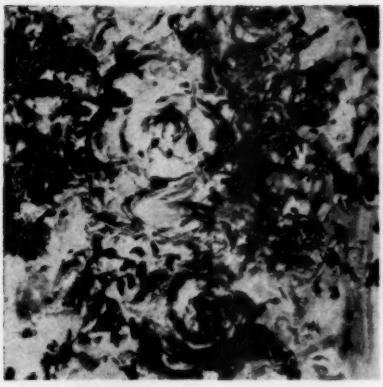
Costumes for Sheridan's 'The Rivals'. Left: *Sir Anthony Absolute.* Right: *Mrs. Malaprop. Both by Mr. A. Powell*

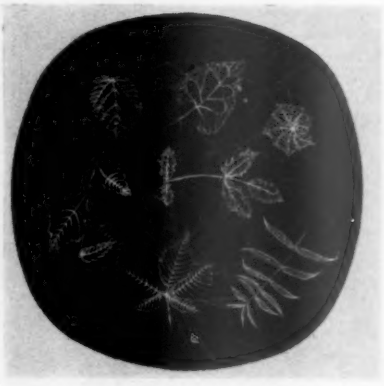
Four film sets, by Mr. D. L. Burrows



Left: *A carton for a range of dried herbs.* Right: *a carton for a bottle of expensive perfume. Both by Mr. J. Barnes*

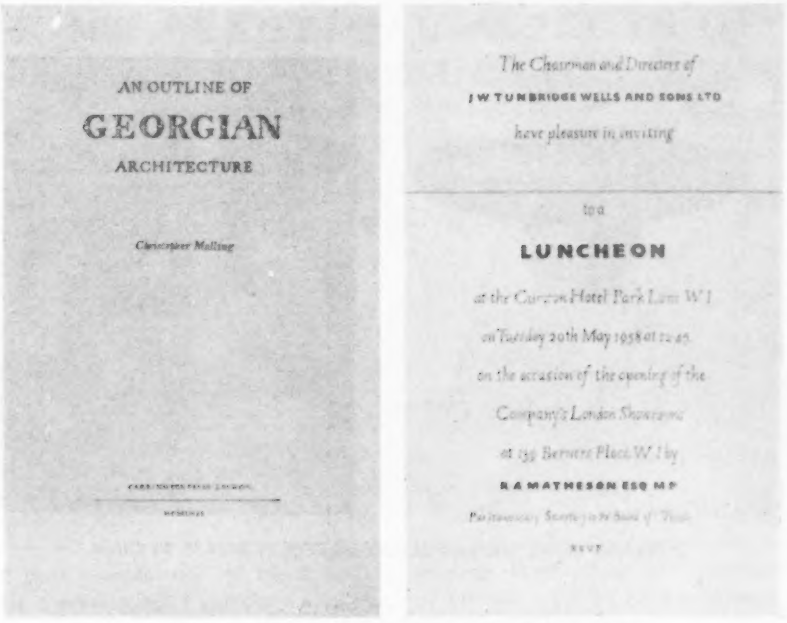
Left: *Lighting fittings for a railway platform and buffet, by Mr. R. G. Wilkes.* Right: *a laminated plastics panel for the walls of the out-patients' waiting-room of a hospital, by Miss S. Turnbull*





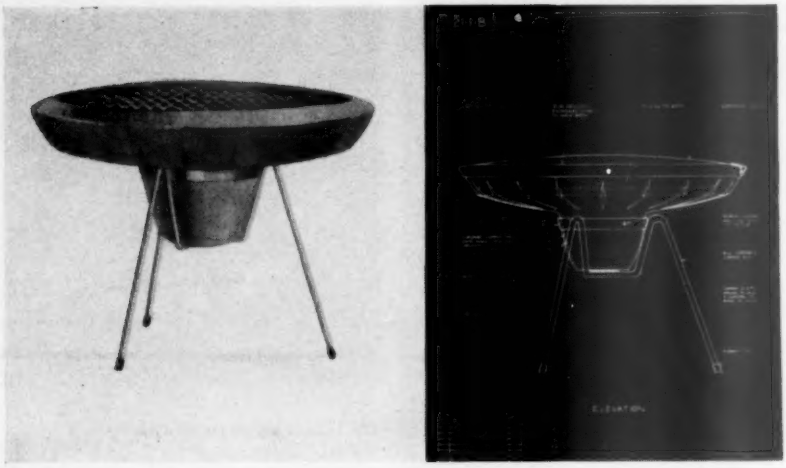
Left: *A glazed cotton printed dress fabric, by Mr. F. Whitehead, who received the* SIR FRANK WARNER MEMORIAL MEDAL. Right: *a 10-inch dinner plate, by Miss H. S. Elliot*

Left: *A swathed hat of black gissel, trimmed with silk petersham, by Miss P. F. Billing.* Right: *suggestions for a piece of personal jewellery in platinum or gold and precious or semi-precious stones, by Miss E. A. Proctor*

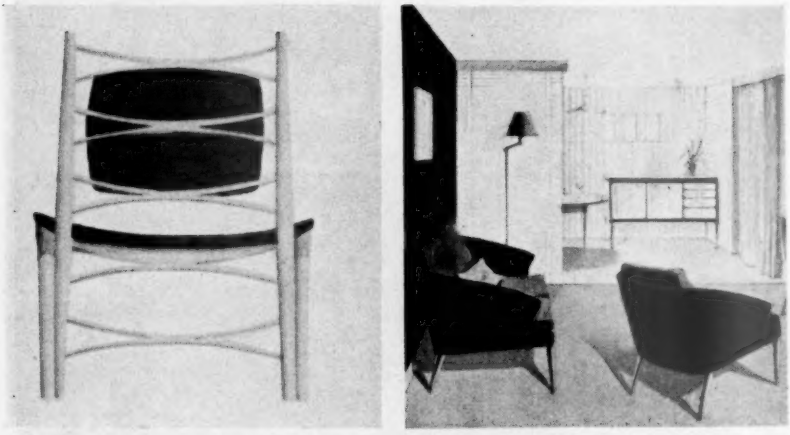

AN OUTLINE OF
GEORGIAN
ARCHITECTURE
Christopher Malling
The Chairman and Directors of
J W TUNBRIDGE WELLS AND SONS LTD
have pleasure in inviting
to a
LUNCHEON
at the Curzon Hotel Park Lane W 1
on Tuesday 20th May 1958 at 12.45
on the occasion of the opening of the
Company's London Showrooms
at 139 Berners Place W 1 by
R A MATHESON ESQ M P

Left: *Lay-out for the title page of an 8vo book.* Right: *lay-out for an invitation card. Both by Mr. D. I. Martin*

A Wilton carpet for use in a bank, by Mr. F. Whitehead



A portable electric fan, with detailed drawing, by Miss P. V. Gibbs



Left: *A dining-room chair, by Mr. R. R. Baker.* Right: *a perspective drawing, showing three harmonizing pieces of furniture, by Mr. J. D. A. Tucker*

SOME PRACTICAL ASPECTS OF BOOK PRODUCTION

Three Cantor Lectures

I. THE PUBLISHER'S APPROACH AND RESPONSIBILITIES

by

PHILIP UNWIN

of George Allen & Unwin Ltd.,

Monday, 2nd December, 1957

A widely experienced lecturer has observed that he has never spoken anywhere without having in the audience *some* people who knew more about certain aspects of the subject than he did. I am very conscious that to-night there will be many here who have more detailed knowledge of the technicalities of book manufacture—of paper making, printing, blockmaking and binding, than I possess; but I speak as a publisher, one who has to pay for these processes and to sell the resultant product to the public. I suggest therefore that this gives me a certain right to speak and on occasions to criticize.

One further point of a personal nature: I am the son, grandson and great-grandson of printers, starting with Jacob Unwin who, under the splendid style of STEAM PRINTER established, in 1826, the business which became Unwin Brothers. I have therefore by nature the greatest affection and respect for good printers, and their works, and I must ask you to remember this if at times in the course of this lecture I appear critical of the industry. Publishers owe their being to the work of printers and that is why we must ensure that we secure the fullest possible value from them in both quality and craftsmanship.

Publishing is most aptly described by Raymond Mortimer as '*at once an art, a craft and a business*', and while the first two qualities are most desirable for the better sort of publishing, the last-named quality, the prosaic element of *business*, is absolutely vital if a publisher is to survive and retain his independence. The business sense must be particularly alert in all the operations of his Production Department. That is the great spending department of the business. There is no other direction in which the fortunes of a publishing house can be more quickly dissipated, and the temptations to extravagance are very much greater than they were fifty years ago because standards are so much higher to-day.

As Mr. Seán Jennett reminded us recently in the National Book League's Journal, *Books*:

> At the turn of this century the problems of book production for the publisher were really very simple. Production managers and book designers had not yet

> been born to interfere in the happy relations between publishers and their printers, and what the private presses were doing went on in a world that had little to do with ordinary commercial publishing. If you were a publisher and you had a book to publish, then you sent the manuscript to a printer you were used to, told him the size and the extent it ought to make, and let him get on with it. You might exercise a certain amount of control by sending with the manuscript an existing book and telling him to do it like that.

That is certainly how it was being done in most publishing offices as late as the mid-1920s when I began. As an aside, I think it is salutary to reflect occasionally, that it is always possible to achieve a quite tolerable result even to-day, by merely sending off a typescript to a good *book* printer and telling him to get on with it. Such a book may not qualify for the International Exhibition of Book Design, but it will be workmanlike and readable—possibly *more* readable than it would have been if some of our more extremist typographers had taken a hand!

However, do not let this leave you with any impression that I underrate the designer's place in the production of a book. It is due very largely to his work and the pioneer efforts of such publishing houses as Chatto and Windus, Jonathan Cape and the great University Presses, that English books are incomparably better produced, both physically and æsthetically, than they were fifty years ago.

Moreover this development has had its primary impulse from the publisher rather than from the printer. While it is true that the Curwen Press was itself designing and printing exquisite books a generation back, it is publishers mainly who have coaxed and driven printers along the road towards better design.

Every new book issued by a publisher is an individual item which must be separately planned and worked out. My firm produces an average of one hundred new books a year, for many of which the printing number may be no more than 3,000 copies. For each one there is editorial consideration, and negotiation with author, before the production stage is reached. Then the typescript must be prepared for the printer, the book designed, paper selected and ordered and the whole programme of its manufacture supervised at every stage. As a manufacturing operation it is, just in industrial terms, fantastically uneconomic. What manufacturer of a motor car, or a brand of soap, would expect to go through the birth pangs of creating a new model, or a new 'line', merely for a run of 3,000? This is why it is essential for the publisher to see that his production goes through with maximum efficiency and economy, if value for money is to be obtained, and if he is to avoid undue tying up of his capital through 'works in progress'.

Let us examine now the routine of Production as it is practiced in my firm. And I might add, that we have recently employed a well-known firm of industrial consultants—specialists in 'work-study'—to overhaul the procedures of our Production Department. Their findings were highly instructive, and the methods I am about to describe are therefore at least comprehensible to experts in other fields of industry.

First, the state of the typescript. Every printer knows how much of the time of his highly paid monotype-keyboard men is consumed unproductively on the

deciphering of illegible 'copy', and every publisher knows the ruinous cost of 'author's corrections'. Both for reasons of economy and in the interests of speed, it is desirable to submit only page proofs to the author, and it is therefore of the utmost importance that he should be urged to make all his last-minute corrections in his typescript and *not* in proof. Re-typing of parts at this stage is much cheaper than the correction of standing type and it will consume less time. Then the script must be carefully checked by the publisher's editorial department to ensure that it has all its vital parts, such as title-page, bibliographical details, dedication—if any, contents, list of illustrations. If an introduction or index is to come, provision must be made, and the printer instructed how many pages to allow for each. At the same time the typescript must be 'marked up' to provide guidance to the printer over any doubtful points, for example, whether to allow half-titles for each chapter, the arrangement of headlines or subheadings, etc.

When handing over a typescript to the Production Department for estimate, the member of the firm responsible for it—the 'Sponsor' as we term him in our business—should give precise written instructions on certain points:

(*a*) number to be printed or estimated for;

(*b*) size of book and number of illustrations;

(*c*) quality of binding—cloth, linson or paper;

(*d*) style of jacket—artist design, photographic or type only;

(*e*) general quality of production—is it to be handled by a first-class printer or by one of the competent second-grade firms?

There are many more details to be specified by the Production Manager himself, but the above points cover the essentials and determine the general policy or method of treatment for the book in question.

The Production Department now prepares the typescript for the printer. The Typographer will provide 'layouts', or sketches, for the title-page, half-title, list of contents and any other parts of the so-called prelims, or preliminary pages. He will also give some guidance for the setting of any particularly difficult pages, e.g., clumsy or unwieldy chapter headings, awkward tabular matter or appendices. The best and most experienced book printers can be relied upon to solve these problems for themselves, but not so the 'grade II' printers; furthermore a publisher with high standards who has his own 'House Style' in these matters must still give detailed typographical instructions to the printer. Should the book have illustrations these must be detached at this stage and separate instructions about them given to the blockmaker.

The Typographer's part includes the selection of type face for the text and, most important, the dimensions of the type area in relation to the size of the page. I have reached that point in what are politely termed 'the middle years' when one's tastes begin to lean towards the conservative. And in the imposition of the type upon the page—the factor which governs the relationship of margins—I adhere firmly to the principles laid down for me as a young man. They are that the margin at the foot of the page should be double that at the head, and the outside (or fore-edge) margins, and what you can see of the two inner margins together, should all represent the mean between the head and the tail margins.

In other words, if the head and tail margins were 2 cms. and 4 cms. respectively, then the side margins should measure 3 cms. Any well printed book of the eighteenth century or earlier will display this form of imposition; certainly it is true of the illuminated manuscripts of still earlier days; and there can be no doubt that this arrangement of margins constitutes 'fitness for purpose'. It provides the extra space just where it is needed—at the bottom of the page where one holds a book. I have laboured this point somewhat because there have been many bold spirits among typographers, acting I suspect from undue Central European influence, who have experimented with a complete reversal of the traditional style. Another vogue has been for lines of exaggerated length—lines which have far exceeded what is termed 'the visual span of apprehension'. Such tricks may arrest attention momentarily but they are a passing fashion, they do not add to legibility and, personally, I would have none of them. They may have a place in the printing of advertising matter but certainly not in books.

Thanks to the Monotype and the Linotype corporations there is to-day a magnificent range of type faces available for book printing, and the typographer can select his type precisely to express the character of the book. Moreover, he may use the type of 'narrow face' to enable him to compress the long manuscript into not too large a book, or he may employ the type of 'broad face' to give the effect of expanding somewhat the shorter manuscript.

Now, type selected and all necessary lay outs prepared, our manuscript can be sent to the printer for estimate. Very few publishers have their own printing works, though some have a financial interest in one printer. Most of us concentrate our work with two or three firms but we still have a number of others upon whom we call at times. I think it is important to know one's printers well and to understand fully the capabilities and limitations of each. If one contemplates placing much work with a particular printer, it is worth while for the Production Manager or a Director of the publishing firm to visit the printing works and to meet personally the chief members of the staff who will be dealing with their work. A friendly relationship here can be most valuable. Further, such a visit may enable one to discover a particular class of work which that printer can handle specially quickly, or easily. On a visit to one printer I learnt that he was particularly well equipped to deal with Demy 8vo books. For his machines both the smaller Crown 8vo or the larger Royal sizes were less economic. We have therefore concentrated on the Demy 8vo books for his plant.

About three years ago my complaint to one printer about the difficulty of producing small editions, of 2,000 copies, at a competitive price, led him to experiment further with linotype setting for books. (He already had many linotypes for newspaper work, but we had not thought his linotype standard would be good enough for our class of production.) This printer succeeded in doing a better quality of linotype work than we had seen before. At our request he installed two or three of the new type faces now available in linotype, and the result is that we are having an increasing number of our books set in linotype instead of monotype. Of course, it is useless to employ linotype if typesetting is complicated with many footnotes or tables, or if the author's corrections are

likely to be heavy. But we find that, so long as the books are *judiciously selected*, linotype setting is satisfactory; it can show substantial economies and it enables us still to have a chance of publishing those books of intrinsic merit but limited appeal, of which we hesitate to print even so few as 2,000.

A final word about printers in general before I pass on to the Production routine. In this country the printing industry has been in the main exceedingly prosperous since the early days of the last war. I know printers have had their problems, for example, labour shortage, and difficulty in the supply of new machinery, but their pre-war problem of getting enough work to keep a factory fully employed has ceased to exist. From this point of view, 'they've never had it so good'—and in the production line of books, AUTHOR—PUBLISHER—PRINTER —BOOKSELLER, the one person who is always sure of his money is the printer, whether the book is a success or a failure. In this situation then, I feel very strongly that, *besides* an intelligent study of every technical factor which can make for efficient working and help to reduce costs, the publisher should keep up continuous pressure upon his printer to make sure that he gets full value for his money.

ESTIMATING

For the publisher, the core of his production economics lies in his Estimate Form. That is, the internal office document upon which he lists all the foreseeable costs of manufacturing a book. In publishing, with its utter dependence upon the human frailties of authors, the unexpected continually happens. And by the 'unexpected' I mean those delightful accidents of delay, or changes of mind on the part of the author—which invariably spell increased costs for the publisher. It is therefore essential that every cost item which *can* be ascertained in advance should be noted so that the estimate can present an accurate picture. Our estimate form provides first for title and author's name. This may sound painfully obvious, but where one hundred or more books may be in production simultaneously, the provision of the title alone, without author, can lead to confusion. Then *size of book and number to be printed*, and thereafter the other main headings are:

Printing: which embraces all typesetting, including small type, corrections and machining.

Paper: including any special quality needed for illustrations or maps.

Blocks, if any, and so on to *binding* and *jacket*.

The estimate form should also provide reminders of extras such as artists' or translators' fees and any possible fee to an American publisher for the right to reproduce the typography of his edition, if one is printing by the photo-litho process.

At length one is faced by the total cost of production, and this figure, divided by the number of copies to be printed (less the 100 or so given away to the Press), gives us naturally the unit cost of manufacture. For all our general books—as distinct from school text-books—we endeavour to fix the published price at not *less* than $3\frac{1}{2}$ times the cost of production. In other words, if the unit cost of manufacture per book is, let us say, 6*s.*, then the economic published price

would, under normal circumstances be 21*s*. Lest it be thought that this represents a particularly handsome profit to the publisher, let me hasten to add that he sees barely 14*s*. out of the 21*s*. published price, because the booksellers' discount on the bulk of the sales will be 33⅓ per cent. Any extra discount to wholesalers reduces the publisher's receipts still further. From the 8*s*. balance remaining, between this 14*s*. and the 6*s*. of production cost, must be provided the author's royalty and the entire costs of running the publishing business. This includes the considerable expense of maintaining travellers all over the English-speaking world and of newspaper advertising. Lastly, it has to provide the publisher's profit—if any.

As I have just outlined it, the costing procedure seems a simple one: you just multiply your unit cost by 3½. In practice, there are many complications. Frequently the published price does not work out at the desired figure—it proves to be higher than is appropriate for the market. While there are groups of specialist books, essential reading for many which will command their market at any figure—for example, works of a technical nature, art, the law or medicine—there are equally many others upon which custom, competition or sheer economic pressure have placed a sharply defined upper limit. The popular biography or travel book is a good example of the latter because the commercial circulating libraries such as W. H. Smith & Son and Boots are most reluctant to buy any book issued at more than 25*s*.; 18*s*. is their top figure for general circulation. The publisher of such works must therefore contrive to keep his price within this figure if he expects a good demand in that quarter. School books also must be priced within very narrow limits.

If the first estimate comes out at too high a figure, the ever-present temptation is to increase the printing number. This has the immediate effect of reducing the unit cost because the prime cost of typesetting, always a large proportion of the total cost, is at once spread over a larger number of copies. If the quantity asked for in the original estimate was the right one, then the publisher has no business to push up his printing number merely because the figures do not work out to his liking.

It is asking for trouble and merely glutting the remainder market for one to print more than one honestly believes can be sold. Instead the publisher should scrutinize his estimate afresh to see where he can economize. Can he employ a smaller size of type and still achieve sufficient legibility? If so, he may reduce the text by 16 or even 32 pages with a useful saving on both paper and binding costs. Will a slightly thinner paper still be adequate? Then there can be a further economy here. A more austere form of binding and jacket can also make their contribution to the economy drive, and so it may prove possible in the end to achieve the desired published price.

What the publisher can *not* afford to do is to price his books substantially below this 3½ times formula. There may be occasional exceptions, but where they exist they should be undertaken with the eyes wide open and a full realization that the book in question will be in a sense, subsidized by others on the publisher's list. And to-day, when we publishers are under constant fire from both

authors and booksellers to provide them with a larger slice of the cake, rather than a smaller, it is asking for trouble if we attempt to work on too narrow a margin.

To sum up then, on this matter of pricing: a publisher must see clearly in advance what his costs will be; he must be ready to exercise all his imagination and ingenuity in the pursuit of economy; but if he finds that, despite the best of his efforts the manuscript in question cannot be produced at an economic price, then he is wiser to decline the book. Let him leave one of his competitors to burn his fingers upon it.

So much for the pricing theory. Let us now examine the other items in the manufacture of the book.

PAPER

For the general publisher the essential qualities looked for in his paper should be: good printing surface, opacity, colour, bulk and, of course, *price*. Without a smooth texture to the paper no printer can do his best work, and the really bulky 'antique wove' with its fluff can be anathema. This mingles with the ink, clogs the type and causes delay because extra cleaning is needed in the course of the run. Though to the lay eye all book papers may appear to be white, there are in fact many subtle varieties of colour, ranging from the dead white of some coated art-papers—most trying to the eyes—through the various shades of 'off-white' to the rich creamy effect of farmhouse butter. The book full of small type and diagrams printed in the text needs a 'whiter' paper than that with straightforward type matter where the taste for a creamier shade can be indulged. Here as always the test is readability and that which is pleasant to, and easy on, the eye.

Bulk is an ever-present problem in the production of books for the general market. While the serious reader buys his book for the matter in it, there are still vast numbers of so-called 'general readers' who select their books by thickness. This is evident in both lending library and bookshop: a book must look as if it represents a good long 'read' for the weekend, or it must be a nice fat one to impress some nephew on his birthday—regardless of the number of pages it contains. Fortunately this convention was broken somewhat by wartime paper rationing, but it is far from dead. It is a crazy idea that, with restricted house space we should deliberately make books to take up more room than necessary, while the bulking of the paper which brings this about does at the same time spoil the chances of good printing. Ideally book paper should bulk no more than is necessary to secure good opacity, but so long as the thickness of a book, rather than the number of its pages, is a serious factor in marketing, then the publisher must have some degree of 'bulk' as one of his criteria.

Unless dealing with a series of books of uniform size and length it is our experience that it is, *in general*, better to order paper separately for each book. One can then ensure that the most suitable quality is obtained, that it is all used up for the particular work in question *and* that there is no awkward oddment left over. It was very difficult during and just after the war when paper was scarce

and we had to accept what the mills and their agents could offer. To-day, however, the publisher who prides himself upon a high standard of production will press for the precise quality and quantity of paper which he wants for each book, and he should insist on getting it.

ILLUSTRATIONS

I will confine myself here to a few general observations strictly from a personal and not unprejudiced standpoint. Frankly, I consider that, with a few shining exceptions, book producers—both printers and publishers—in Great Britain have been content for far too long with that Victorian invention of the half-tone block and its tiresome consort 'art paper'. The half-tone block itself, as a result of rigid price control, is unnecessarily expensive and the clay coated paper on which it must be printed is fragile and heavy, while its texture matches ill with an antique wove text paper. Fortunately electronic methods are already with us and point the way towards cheaper blockmaking, but it is my hope that we may soon develop here the splendid standards of gravure printing, excellent in quality and reasonable in cost, which have been achieved for years past in Continental countries. The deterrent hitherto has been the need for a minimum printing of about 10,000 for an economic price. One solution is for closer collaboration between publishers in different countries to ensure that the illustrations for, let us say English, French, German and Swedish translations of the same book are all printed together. Thus one may be able to run an edition of 15,000 of the pictures, though no individual publisher may want more than 4,000 to 5,000 of them.

JACKETS

When one considers the amount of time and money spent on the design, layout and printing of book jackets in the mid-century, it is again salutary to recall that many books did achieve big sales in the very plain wrappers of thirty years ago. Mr. Victor Gollancz did indeed build up his business most successfully without a single picture jacket. The technicolour brilliance of jackets to-day is in keeping with the times, when everything must be brightly 'packaged', but the publisher must remember that his more sumptuous jackets in their four-colour printing plus a layer of plastic lamination—which makes them look not unlike enamelled metal!—all this can add at least another 6*d*. per copy to the production costs, which may mean 2*s*. more on the published price. Many a time this may be justified by extra sales, but a lot of money can be squandered here. Basically, the jacket, whether pictorial or simply lettering, should be, in the words of the late Walter Hutchinson, 'a poster in miniature', to be judged by its effect at the distance of a few feet, as seen in a bookshop. In general, good clear lettering or type simply arranged is more effective in putting over title, author and a line or two of description, than is the graphic aspect. Wherever possible jacket paper should tone or harmonize pleasantly with the binding.

BINDING

Whatever other economy one strives for, let it never be at the expense of the

binding board. We believe the 24 oz. board to be the minimum for a satisfactory cloth-bound book which is to survive its passage across the world and to stand up to American competition. And most fortunately for our export trade, a large proportion of British books do have to travel over 10,000 miles and through the tropics before they reach their destination.

There seems no real substitute for cloth for binding the more expensive books, though linson is invaluable for the cheaper ones.

We still hope for some ingenious new plastic material which will be at once beautiful, fadeless, durable, and I would almost add—proof against bath water. Again one dares to hope that the so-called 'perfect' binding method may become more widely adapted to the higher-priced book. More mechanization and less dependence upon the human hand, with consequent price reduction, seems overdue in binding processes.

CONCLUSION

With the completion of the bound book the publisher's job is only half begun. The complexities of selling the finished article all over the world lie quite outside my terms of reference this evening.

I would conclude by remarking that, even in this day when electronics achieve increasing miracles of memory and calculation, a well produced and properly indexed book remains a fantastically efficient means of recording knowledge in cheap and usable form. It is our duty and privilege so to direct our labours that technological advance may go hand in hand with better produced books for an ever-widening public.

II. THE RÔLE OF THE PRINTER

by

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Monday, 9th December, 1957

Printers are usually regarded by publishers if not with grave distrust—at least with resigned tolerance. Those of you who heard Mr. Philip Unwin last week, will have discovered something of a tolerant publisher's attitude. To night you are going to hear the other side of the picture. I have been on both sides of the fence, but now I am going to speak to you—if slightly under false pretences—as a printer. I am not a master printer—though I have an Albion handpress, I should think the smallest ever made. Apart from my private printing efforts, I work in that production line which begins with the author and as far as I am concerned ends with the printer.

Now, printing is not what it was. Nothing ever is. Printing has become such a complex mechanized industry that it is beyond the powers of any one man to comprehend it in detail, let alone carry out all the operations involved. Though printing is highly mechanized, with mechanical type-setting and mechanical casting, mechanized printing and mechanized binding—it is so subject to human control—craftsmanship even—at every phase of production—that the possibilities for human mistakes are limitless. Coupled to all this, if the instructions or specifications (or whatever you like to call them) for the printing of books are in any way inadequate the opportunities for error increase tenfold. And human nature being what it is, you can be sure the printer will be tempted to shelter behind such weakness.

In book printing, the printer's conception of his publisher client is only too often something like this: A man of unlimited means and unbelievable parsimony, who usually provides him with most inadequate specifications to work to. That is: he chooses a text type which is probably not on his (the printer's) list. Such a choice (so the printer thinks) is usually governed by irresponsible whim, or ephemeral fashion. Then the publisher is certain to provide paper which will be the wrong sort for the process, or the wrong size for his machines, or the wrong direction of grain for his binder. His designs for brasses for the binding are certain to be unsuitable for the cloth he has chosen; the cloth will be inevitably the cheapest that he can find. When he gets his proofs, he will sit on them for months, imagining, like a broody hen, that something good will hatch out. He will then return them to the printer—demanding the delivery of the printed book by some quite impossible date.

That is what the printer thinks.

In all fairness to the publisher, I should say that only too often such an opinion is quite unjustified. Since printing began, authors and booksellers have had dire things to say of the 'inadequacies and tardiness' of printers. The really surprising thing is how often books are as well printed as they are.

Mr. Unwin said last week that printers have 'never had it so good' before. This may be true, but it is not so very many years since they never 'had it so bad'. And though in the chain of author, publisher, printer, bookseller, the printer is the one most likely to get his money, he is the one who has beyond comparison the most at stake. The capital value of a large modern printing plant is astronomic. Just one new offset machine that the firm I am associated with installed the other day cost over £18,000. But because of the inescapable need for capital expenditure it would seem that, in most progressive printing houses, all the resources, monetary and mental, are directed towards the machines themselves rather than towards what the machines actually print.

The bigger and better his plant, the more and more work produced, the less and less concerned the printer tends to be with the quality of the work that is judged by the highest standards—the only standards that we are concerned with here—for inevitably he has to be more and more concerned with production to meet the overheads of plant and wages.

It might seem that with every advance in production techniques, there is a proportionate decline in the quality of the finished product—if, that is, one judges such a product by the canons of craftsmanship established in printing by the hand press. Whether such a comparison is desirable or even fair is debatable, though I think it is. The work of the hand press is a different thing but it can provide the modern printer with certain standards of quality, care and precision at which he can aim. Critical standards are formed by looking at the best work of all ages.

In judging a piece of modern furniture, one judges it by the standards formed by looking at work of Hepplewhite or Sheraton. The processes of construction may be different, but in a good modern chair, or an eighteenth-century 'shield-back', the intention behind that piece of furniture is the same. The manufacturer in both cases was aware of the needs for proportion, balance, strength, colour, texture and pattern. In both cases he worked to the same end.

The printer does not always think in this way. Often he will dispute the value of comparing the work of the hand press with the product of his fast-running machines. I think he is wrong. One of the loveliest things in printing is a page of type, perfectly composed, set in a fine typeface (and there are many fine typefaces), lightly inked with a sooty black ink of high viscosity, and firmly but very cleanly impressed on a dampened hand-made paper of not too hard a surface. None of those Kelmscott papers, that Morris had made with such loving care, and which are as hard as sheet metal!

Such a hand-printed sheet is as much a joy to look at as a fine Hepplewhite chair. Its value as a yardstick for modern printing lies in the intention behind it, not in the thing itself. And this intention is that the author's words should be set before the reader with perfect composition, so that the sense should be

clear; in a fine type face, so that the sight of the individual letters should not jar the reader or divert him from his reading; and perfectly impressed on a fine paper, because that is not only an aid to legibility but also a delight to the senses of sight, smell and touch.

The modern printer can achieve perfect composition, use a fine type face and produce a perfect impression on a fine paper. It will, however, be a machine composition, a different kind of impression, and on a different sort of paper. The hand-made paper cannot be decently printed on without dampening. The machine-made paper, on the other hand, is intended for a lightning impression and to receive it without any recourse to dampening. It should, however, be just as beautiful. That it is often not so, is not the fault of the machines.

I think the fault mainly lies in the feeling that the printer has, that he is a 'service' industry, working at the whim of a thousand other people. Working to contract, always against the clock. If he can get the job out on time, he may well think that he has done more than his customer probably deserves. In spite of this, the general run of book printing in this country reaches quite a high standard. It is, however, when a publisher seeks something rather better than that, that he comes up against difficulties; unless—and not always then—he is willing to pay a lot more, for what, superficially and to the layman, may not be so very different. More careful composition, exact registration, better machining and possibly better ink and paper. The designing he will probably prefer to keep to himself.

This last—this abstraction of the creative part of the job—is another, and perhaps the most important, reason for the printer's lack of deep concern for what he is actually printing.

How did he ever let this creative side out of his hands? To find the answer to this, we have to look back a few years. It seems odd, that with all our advantages, we should apparently print less well than the very earliest printers, who were, to say the least of it, somewhat less well equipped than we are to-day. Printing, of course, got off to a superb start, for when Gutenberg (or was it Fust and Schoeffer?) printed the Mainz Bibles, or Jenson his first works in Venice, they were working to the incomparable standards of the *scriptorium*—whether they were using a cramped Gothic script, or the 'fair Roman hand' their example was the same—the splendid *mise-en-page* of the contemporary manuscript.

With the Venetian Aldo Manuccio, we come to the first great publisher-printer. The printer as his own employer had come into his own. Aldus, as he preferred to be known, was working to serve a wide public. He introduced the italic letter in pocket-sized editions, for travellers to carry in their saddle bags or satchels. He worked to high standards of scholarship and his printed word matched in every way these high standards.

The publisher and the printer were one—and as long as this state of affairs prevailed, good printing prevailed. With ups and downs this condition lasted until the Industrial Revolution. Then, with the growth of publishing, with a greatly increased literate, book-buying population and with the development of the

mechanical means for printing, there came (I was almost going to say inevitably) a steady decline in the quality of work and a debasing of the so-called modern neo-classical type faces then fashionable.

It is noteworthy that nearly every mechanical improvement in the trade of printing has been accompanied by a corresponding lowering of the æsthetic. Take punch cutting—the precise pantographic punch-cutting machine should be able to do almost anything that the hand and eye of the craftsman punch cutter can do, and with greater repetitive accuracy. But operated as it is, it cannot think and act with instinct to make the finest adjustments (for instance, to a 6 point letter) that can only be appreciated in the actual type size. Its value—like everything else in this machine age—is in exact repetition—even if the punches repeated are that much less good than those individually cut by hand.

The decline of good printing in England was temporarily arrested in the 1840s by the publisher Pickering, associated with the printer Whittingham, at the Chiswick Press. William Pickering, a publisher perhaps best known for his charming miniature editions, which were printed at the Chiswick Press in association with Charles Whittingham, asked the Caslon foundry to cast some of their Great Primer type face, originally cut by William Caslon I in 1731 or thereabouts, for an edition of Juvenal. Through the kind of delays that printed books are often subjected to, and perhaps because it was printed in two colours, another little book set in Caslon's Great Primer appeared first. This was the unimportant but often cited *Diary of Lady Willoughby*. Pickering's revival of the use of Caslon Old Face did much to set the character of the revival of good printing that took place in this country in the first half of this century (some sixty years later) and possibly set it moving in quite the wrong direction.

In spite of Pickering's efforts, the revival of interest in the well printed book stemmed largely from the efforts of one man—from William Morris, and came as a development of the arts and crafts movement. William Morris, not by his work as a type designer or as a typographer—for at least to this critic, his work is archaic and ponderous—but by his pre-occupation with craftsmanship and materials, established certain standards of quality in book production and set fire to other imaginations. Amateurs—lovers of books, followed the Kelmscott example. The private presses, The Doves, Eragny and the rest set moving the commercial publishing houses, who in their turn inspired several commercial printing houses to interest themselves in fine book work. And these had the magnificent support of Mr. Stanley Morison, who guided the Monotype Corporation through a systematic revival of fine book faces. The printer was being provided with a typographic equipment to match the technological advances in his printing machines.

Well, where are we to-day? Due to this revival of interest in the first half of this century general standards of typography and of printing are much higher than they were fifty years ago. Perhaps because of the origins of this revival, there is a certain stodgy fustiness about much of our book production. The best work done on the Continent or in the U.S.A. to-day, compared to much of ours, might belong to another age. British publishers are a conservative race and look

with more than apprehension on typographic revolutionaries. They are probably right not to discard too lightly the conventions that have served them so well but, because the typographer revivalists did their work superbly well is not, I feel, a sufficient reason to ape their design, format and type faces for ever. It is fair to say that the books printed in this traditional manner on the handpress by Giovanni Mardensteig at the Officina Bodoni in Verona, are better printed than any others in the world to-day. But this is not to say that there are no other ways of producing fine printing, or that there are not books more typographically exciting; for the beauty of Mardensteig's work may lie to some extent in the fact that the work is printed slowly by hand, from type cast from hand-cut punches, on dampened hand-made paper. This, however, is not to explain all. The answer as I see it—which should lead us to a better understanding of what makes good printing—is that the Officina Bodoni is directed by a man who is both a master printer in the full technical sense of the term, and also has a rare scholarly and precise mind. Printing is nothing if it is not precise, and fine printing is a hollow sham unless the content is worthy of the effort involved. For let us not forget that printing is essentially a matter of communication between author and reader. There are occasions when the printer can lift this communication from the realms of polite small talk into something wonderfully stimulating.

In this preamble, I have tried to set something of the scene in which the printer of books has to work. His attitude of mind may be affected by any or all of these things I have talked about. When I say a printer, it is, of course, a collective term covering the master printer, works manager, overseer, machine minder, compositor, and everyone else who has a hand in the production.

I should like to consider now the practical implications of book production to-day, and particularly the rôle the printer has to play. Printing consists of *five* major operations and *one* minor one. They are:

Layout—that is, the design arrangement and typography.

Composition—the conversion of manuscript into type.

Imposition—the assembly of type (and illustrations) into sheet form.

The processes of graphic reproduction—that is, where illustrations are part of the book.

Pre-make-ready—this is the minor operation I referred to. This is the work of preparing formes of type and blocks for machining.

Press work, or machining as it is normally called.

The first of these operations is the layout. This is more often than not done by the publisher. It should be as precise and complete a specification as an architect would produce for the building of a house. It seldom is.

The choice of type, the paper, the format and number of pages, the subject of the book—all these things are inter-related. The choice of the type cannot be left to a personal whim. For instance, certain type faces will occupy less space, print better on the chosen paper, and be more in sympathy with the subject than others, though I think that the last point can be laboured. The layman—the reader—is not concerned with letters—only with words, or even groups of words.

If a reader has to stop to read letter after letter, such a book is clearly a typographic nonsense. The typography should in no way obtrude. This is not to say that much less formal arrangements of type might not be used for certain books with advantage, always providing that they spring naturally from the purpose of the book. Typography can be a stimulant.

The second stage is composition. To-day—but for how long I would not care to say—books are mechanically type set and cast in metal, either as slugs—that is, lines of type—or as individual characters. Both Monotype and Linotype methods have their points and there are fine typefaces for use in both systems.

Yet developments in photo-typesetting may soon render these methods completely archaic. There are already machines which can not only do all that the existing typesetting machines do, but can mix type styles and sizes at the same time, without interfering with justification, and can set exactly to a typographic layout. With speed and apparent ease, difficult tabular matter can also be handled.

One of the great advantages of photo-typesetting would be that no longer would book printers have a small fortune tied up in standing type, for books could be printed either from offset plates or, for letterpress, from Dow etch magnesium plates. Acres of storage space would be saved.

Yet though I understand one or two printing houses in Canada and the U.S.A. are already operating most successfully, using *only* these methods, it would seem likely that no such radical changes will take place in this country. Certainly they will not take place from what might seem to be logical development, but only when economic stresses or over-fierce competition from printers abroad will force British printers into such drastic changes.

Accepting the situation as it is (and to be fair, no one seems to be worrying much about it), what standards of composition can a publisher expect from his printers?

Apart from textual accuracy, the thing a publisher should demand from a printer above all else is consistency. Consistency in spelling, consistency in style, and consistency in word spacing. Much ink has been spilt on the virtues of close spacing. Spacing can be too close. Though an even grey page is a laudable ambition, a readable one is even more praiseworthy. The judicious use of leading can render pages that might be hard to read a delight to the eye.

There are numerous other factors that are part of a well-composed page; not the least of these is the proper alignment of letters on the body of the type. Failure to achieve this may often be due to old and worn matrices, and also to the quality of the metal used. If it is too hard or too soft the crispness of the letters will go.

Thirdly, we come to imposition. The value of a well-composed page may be rendered void by careless imposition, for this will result in inaccurate backing up of one side of the paper with the other, or in uneven margins. Also, it may result in the incorrect placing of illustrations, intended as tip-ins or wrap-rounds. The publisher, printer and typographer are all at the mercy of the stone hand, the compositor responsible for ruling up the sheet and making up the formes.

I once worked with a stone hand who was a Jekyll and Hyde character. Before lunch, he was a paragon of accuracy, ruling up his sheets with a needle-sharp 6 H pencil. In the afternoon, having consumed half a dozen pints of beer, he became a flamboyant character quite unlike his sober self. Working with a soft pica-wide carpenter's pencil he would rule up sheets with desperate abandon and appalling inaccuracy. For fine printing, one needs accuracy both before and after lunch. So much for composition and compositors.

Before we consider the pre-make ready and the press work, that is, the actual printing, there is the wide field of illustration and the processes of reproduction which must occupy as much of the printer's time and attention as does the printed word, for the printed illustration is certainly as old as the printed word. Developments in graphic reproduction have, however, far outstripped any typographic changes that have taken place since the beginning of printing—at least until the advent of photo-typesetting. Until the invention of photo-line reproduction in the 1880s and of the Levy process screen for photo-reproduction of continuous tone in 1893, all illustrations were either autographic, that is, engraved, etched, lithographed by the artists themselves, or copied on to relief wood blocks, intaglio copper or steel plates, or flat lithographic stones by artist-craftsmen.

Sometimes these craftsmen were better artists than those whose work they had to copy. Thomas Bewick, greatest of all wood engravers, often lent distinction to the work of other artists. For instance, his lovely engraving of the old hermit in the Bulmer edition of *Poems by Goldsmith and Parnell* is taken from a drawing by J. Johnson, one of his pupils, and an artist of little importance. The camera cannot do this.

The interpretative engraver or lithographer is nearly extinct. The last great copy lithographer in this country, Mr. Tom Griffits, died only a few months ago. To-day we have to rely on either the camera or the artist himself. The illustrative processes are a side of printing where the printer can be of active assistance to both publisher and artist. To keep things within bounds, I am limiting this lecture to letter-press and offset lithography. For very short run work, collotype or even silk screen are worth considering—and in numbers up to 2,000 are an economic proposition. For long runs, flat-bed gravure is ideal for monochrome reproduction of photographs and paintings—but is outside the financial limitations of the average book.

On the assumption that almost any drawing can be reproduced or printed in one way or another, we need not concern ourselves with how an artist should work for reproduction, but rather consider in what way the printer can guide him through the difficulties of direct, autographic methods, or what degree of compromise an artist will accept for his work if it is to be photographically reproduced.

Artists will usually accept a considerable compromise, providing it is in what they consider to be the right direction. After all, the graphic reproduction processes are mostly a matter of compromise. An oil painting consisting of heavy daubs of many colours is reproduced at about one-tenth its original size in a rash

of yellow, red and blue dots on a shiny chalk surfaced paper, and is accepted as a fair reproduction, if not by everybody, at least by all those who every year buy millions of postcards in our museums and art galleries. Only the most costly methods of graphic reproduction can produce a facsimile (or near facsimile) of a coloured drawing. As for facsimiles of oil paintings, with a three-dimensional surface, texture, varnish, and so on—the less we have to do with them the better. That's not printing—it's faking: a sort of mechanical Van Meegeren.

The part a printer plays in actually producing (or should I say reproducing?) graphic work will depend on the diversity and scope of his plant. Very few printers are their own process-block makers, but there are a considerable number of offset litho printers who do their own plate-making. But whether or not a printer does his own processing, he can do much to guide this work through the snares and pitfalls of reproduction; provided, that is, that the publisher will take him into his confidence early enough—in other words, before the production of the book is planned in detail or, in the case of pictorial illustration, before the artist is briefed. Artists themselves when so approached have often contributed to the economical solution of such problems.

Direct methods of working, as I have said, have much to recommend them for retaining the freshness of an artist's work. They are a great economy in processing, by-passing as they do any need for colour separation work with camera and retouchers. A wide range of media is possible, including linocuts, woodcuts, relief etchings, intaglio etchings and engravings and lithographs.

The actual methods of printing commercially some of these media may be of interest: linocuts, for example. Linoleum is easy to cut, being soft, and so is an ideal material for preparing colour separations—that is, cutting a separate block for each colour. But being soft it is liable (at any rate where fine work has been done) to break down under the pressure of letterpress machining. So it is best either to transfer each colour to an offset litho plate and print from that, or to make line blocks of black impressions from each cutting.

This may seem to be a contradiction in terms, but in fact the quality of the cutting is retained and the artist has, by proofing his own work in colours, established exactly the effects that he wants the printer to produce for him. Colour separations produced, say, by overlays on a line drawing that is to be put to camera, need a great deal more experience from an artist for him to be at all sure what sort of effect the printed work will have.

Woodcuts and wood engravings, whether on the end grain of boxwood or the side grain of pear or cherry, provide a perfectly adequate surface for letterpress printing. Thomas Bewick mentions in his *Memoir* a little block that he had cut for a newspaper which came back to him for repairs after having printed over 900,000 impressions. After the repairs it was good for as many again.

The intaglio processes, such as copper engraving or etching, might seem to offer a difficult problem to printers who only use relief (i.e., letterpress) or planographic (offset) processes. Yet jobbing lithographers for the best part of a hundred years have been printing elaborate letterheadings for commercial houses from engraved copper plates. They do not actually print from the copper

but take transfer prints which they put down to lithographic stone, and latterly to the offset plate. This method could just as easily be applied to the illustration of books. All the beauty and fineness of the engraved line is retained. The only loss of quality is in the absence of plate mark and the film of ink that would be left by the plate. This could be represented by an additional printing.

Lithographic drawing is a time-honoured method of illustration. For long-run work of 100,000 copies or more, it is not ideal, as the transfer plates which are normally used will only run for about 20,000. After this, new transfers have to be taken and new plates made—probably with a loss of quality in both original and the new plates.

Most offset printing to-day is from deep etched plates, which can only be made by photographically printing down an image from a positive film. To serve this need and yet still to retain the direct quality of an artist's work, a stable transparent plastic, grained like a litho plate, has been produced. On this an artist, drawing with any opaque substance can produce, shall we say, the equivalent of a lithographic drawing. It offers greater flexibility, but lithographic purists may object. It is not the same. It is not intended to be. It is however an effective compromise.

It would be only too easy to expand this subject far beyond the scope of the present lecture. The time I have given to this discussion of direct methods of graphic reproduction is solely because just as the primary consideration of the printer of words and texts is to bridge the gap between author and reader with facility and expedition—so in the case of illustration the fewer mechanical processes or intermediary hands the printer can put between artist and reader (or should it be viewer?) the better.

As for the photographic reproduction methods, there is little that I can say that would contribute anything new to this subject. There are one or two points of interest, however. For line drawings, the simplest and most commonly used form of graphic reproduction, I do commend to your notice the Dow etch process of photo engraving, where a magnesium alloy is used in place of zinc. This is the same process that is used in connection with photo-typesetting. It is a most remarkable technical advance, reducing the time of etching to a few minutes and producing a much sharper, more cleanly etched line. Mr. Barnett Freedman once said that the only thing that could not be reproduced by a line block was a line. Such a line when viewed under a magnifying glass looked like a piece of barbed wire. Well, with the Dow etch process, a clean line can be produced and the length of life of these blocks seems to be indefinite. Apparently the longer the run, the tougher they become.

In colour work the four-colour half-tone process printed by letterpress is still the cheapest photographic method of reproducing a coloured original. The same process applied to offset printing is now a formidable alternative. The quality of such offset work has improved out of all recognition in the last few years. This is due to a number of things, including the greater intensity of the inks, the fact that bi- and tri- metal plates carry more ink, and also to the use of special high-glazed coated offset papers. In fact, such four-colour work

will often confuse the experts, who will be hard put to say whether or not it is letterpress or offset.

When reproducing subjects such as oil paintings, wherever possible the printer should persuade his client to use separation negatives. Colour transparencies are only an approximation and should be used as a rough guide—not as an original for reproduction. If they have to be used as originals, the faults of colour absorption (in the transparency, the cyan dye absorbs too much green, making the blues too warm, and the magenta dye absorbs too much blue, making the reds too yellow) have to be corrected in the processing. And as may well be the case, if the process retouchers have not access to the original they will be working by guesswork.

As for facsimile reproduction for water-colour drawings or coloured engravings, offset lithography with many printings of different colours can produce wonderful results. It is of course costly work, as so much is done by hand and relatively so little by the camera. In spite of technical advances in masking and screening colours, the camera still only provides the ground work of colour separations. The rest has to be done by skilful and laborious retouching, and of course the job does not end there.

The illustrative processes are potentially full of pitfalls. From the publisher's point of view, the most pressing consideration would be the cost of such excursions into colour reproduction. The printer can help him here in a number of ways, such as by suggesting different ways of imposition, so that coloured illustrations printed apart from the text of the book, possibly on different papers, can be wrapped round sections, inserted or tipped in. He might even suggest a thermo-plastic binding—a completely different method of binding which reduces the book to single leaves or to four-page sections. The book is held together with a synthetic glue instead of being sewn. This is rather outside my province, but the flexibility of such an arrangement is worth considering, and of course has a real bearing on the imposition.

Colour economies can be effected by printing with a split duct—that is, two different inks are printed at the same time from the same inking rollers, either blending together in the middle or separated by a white space. Another method of having two colours for the price of one, is by printing the illustrations in one forme on a work-and-turn basis. Half the run is printed on one side of the sheet and half on the other, the forme backing itself. The colour can be changed when printing the back. The only disadvantage will be that half the run will have one set of illustrations in black and pink, and the others in black and green, and the other half will be *vice versa*. Where the colours are arbitrary this probably will not matter.

When the type is set, the blocks are made and the formes imposed, the letterpress printer is almost, but not quite, ready to print. There is that tiresome business of make-ready: his machines will lie idle for half the day whilst adjustments are made to the height of the printing surface, so that the pressman can achieve a perfectly even impression. Some of this time can now be saved by what is known as pre-make-ready. Here blocks are

given the necessary underlays and mounted on absolutely consistent metal mounts.

In offset printing, make-ready is a speedy operation and no pre-make-ready is necessary. At last the printer is ready to start machining. The formes (or the lithoplates) are on the machines, the paper has been delivered from the warehouse. The machine-minder, if he is a pious sort of man, will no doubt have uttered a little prayer that this last is the right size for his machine, with adequate space for his grippers, and that it runs the right way of the grain.

Good printing depends not only on good workmanship but also on good materials. Of all the materials used in printing, paper is the most important. A quality often underestimated in printing is that of touch. The feel of a book, how it balances in the hand, how the pages turn, and feel to the touch—these considerations are of major importance in the production of fine book work. Though much of this quality will come from the binding, the paper and the way it is used will provide an important part of this quality. There is also a tendency of publishers and printers alike to use paper that is too heavy for the job. A small book needs thin paper. It will then open and close agreeably.

A conflict sometimes arises between binder and printer. The binder rightly demands that the paper should be so used that its grain runs parallel to the spine of the book. If it is not used in this way it will crease and cockle in the back margins. The printer, particularly the offset printer, equally in his rights, insists that the grain of the paper should run the long way of the printing sheet—that is, along the cylinder. If placed the other way there is no method of compensating for any stretch, and faulty registration will be the result. This is where the printer can help the publisher, if they consult together in good time. The factors governing paper size are: the machine on which it can most economically be printed, the direction the grain must run for printing, and the direction of the grain for binding. It may well be that it is quite impossible to satisfy all these demands and still produce a book of the size the publisher may have wanted.

The last stage in printing is the actual machining. Everything the printer has done up to this stage has been unproductive. This is where he makes his money, and the faster and longer his machines can run the happier he will be. When the machines are running, the pressman has to be constantly on the alert to make sure that the sheets are consistent and the inking even. The offset machine-minder has the added difficulty of periodic washing up of his blanket. This means that there is a very real difficulty in maintaining an exact consistency throughout a run. It is, however, just another mass production problem. Sheets are printed at speeds of up to 5,000 an hour. And, of course, in colour work the ink dries in a tone different to that which it has when it is wet. There is also that subtle matter of quality in colour, when colour and tones may apparently be the same yet one sheet has more quality than another. This probably results from the presence of more ink on the paper, and this in turn possibly results from slower running.

A few years ago, while printing a book on the Royal Stamp Collection, we

used 56 printings on one sheet, and actually 22 on one stamp. The problem of exact registration can be imagined. This was achieved by complete accuracy in platemaking and machining on a relatively small machine, and also by complete temperature and humidity control in the pressroom, so that there could be no possible change of paper size.

The letterpress machine-minder may in some ways have an easier job, but I am not sure about this. The quality of impression in letterpress work can be affected by a number of things, including imposition and paper. If the book is imposed so that the pages run along the cylinders, it means that the machine-minder is inking across his type, rather than up and down. It is practically impossible to produce a perfect impression in this way.

To be able to plan a job so that every operation is done in the perfect way, on the best possible material, by the most suitable machines, is an ideal worth aiming at, though rarely achieved. Only by such means can a printer hope to achieve really fine work. Whether he will be able to remain in business long enough to put it into effect, is not for me to say.

III. THE BOOKBINDER AND THE FINISHED PRODUCT

by

LEWIS KITCAT,

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Monday, 16th December, 1957

FOREWORD

I have noted that it is as well to commence a lecture with some historical reference within the lecturer's ken, and not to be outdone in this matter I turn to my family book and read 'In 1809 George Kitcat made an important decision which changed the course of his life. He gave up the house and bindery in Bull-and-Mouth Street to become an arts master at Bridewell Hospital.'

And so my ancestor, the founder of the Kitcat business, already versed in the art and mystery, commenced his first lecture on bookbinding, and I, 148 years later, am about to commence on the first of mine.

I have listened with great interest and pleasure to the previous speakers in this series, and it is my privilege to round off the absorbing subject of the production of books by taking it up at the point where the printer hands over to the binder the printed sheets, on which so much care has been spent, for him to convert into a form acceptable to the reading public.

We are dealing with publishers' books and therefore it is publishers' binding, that is to say, case-binding, which is my subject for to-night.

QUALITY

Since the war, and as in most industries, demands on binders over lengthy periods have much exceeded supply. Such conditions provide a climate which stimulates effort to improve labour-saving methods and labour-saving machinery. The binding industry has been by no means backward in experimenting with novel methods of technique both to increase output to meet demand, and that in spite of a more or less fixed labour force, and at the same time to hold down costs of production against an ever rising bill for wages.

It is, of course, tempting to achieve both these objects by the simple expedient of using the flimsiest of binding materials and by the simplification of processes, but if an attractive finish in the resulting book is largely missing, then such expedients may prove to be penny wise and pound foolish. We see the purveyors of other domestic articles ever striving to give their products a slicker and more polished appearance, whether they be pots and pans or T.V. sets, and it is hard to believe that the book trade would be on the right lines if it pursued a course which led in the opposite direction.

Previous speakers have stressed the great improvement of type face, layout and impression which has taken place in the printed page since Edwardian days,

and at least an equal improvement has been achieved in the binding of the conventional case-bound book. The standard binding of to-day gives a free opening book and without that disastrous pistol report which was common even twenty-five years ago, and in general it is trimmer and smarter in every way. This has been brought about by the introduction of a type of machinery which was still unthought of even twenty years ago and not, I would stress, by an alteration in the fundamental structure of the bound book.

I am all in favour of experimenting with new methods and for streamlining production, but I feel equally strongly that ingenuity must not only be directed towards economy but also to achieving quality at the same time. I think there are certain standards below which it is not wise to go, because 'cheap and nasty' is a very insecure market. Of course, without trying things out no progress would be made, but I do urge that bookbinding should not be allowed to verge on the shoddy even in the cheapest of cased books.

Such principles were well expressed in a history of American industry which I read sometime ago—how they welcomed the European emigrants, adopted their handicrafts and by mechanization produced the same articles better and at a fraction of the cost. The word I seize on is 'better,' as it goes without saying, that if they had not been produced at a fraction of the cost they would not have been produced in bulk at all and thus not been available to the masses.

When we deplore the decay of the handicrafts of old, what we are regretting is the loss of the skill to make the beautiful things which were only in reach of the wealthy few, but I doubt if there is much to deplore in the disappearance of the type of article available, in those days, to the mass of the people.

In the realm of books, the public at large know nothing of the points of binding as understood in the trade, but they do discern the difference between the well turned out article and the makeshift; and doubtless, on getting the right article, they pay the published price with, let us say, greater equanimity. In this, I am not advocating expensive binding, I am talking of differences in cost, which, if they exist at all, amount to no more than a fraction of a penny per copy.

THE STRUCTURE OF BINDING

Before proceeding to discuss new methods of binding I think it is as well to examine the structure of the traditional case-bound book—to look at the whys and wherefores of construction and to consider with what degree of efficiency it performs its function. This will provide something of a measuring stick for its evaluation and also for comparison with alternatives.

The bound book is such a familiar object to us that it is hard to appraise it in the same way as one would an entirely new conception, and I think the first thing with which I should deal is, what is the object of binding?

I would define it as converting bulky and inconvenient printed sheets into a form convenient to read and to handle. Further to that, to provide protection for the printed pages both while being read or casually transported hither and thither. Finally, provision has to be made for an article which can be conveniently kept by the owner when not in use, is readily identified from its fellows, and of

attractive appearance. That, broadly, is what the public want in the physical structure of a book.

The traditional form of connecting the leaves together is the sewn method, and that method provides a reliable connecting medium for pages of almost any type of paper, from India paper to thick featherweights, and throughout the range of calendered papers to fully-coated art papers. Sewing will also permit of the inclusion of plates, folded plans and such-like useful adjuncts.

The sewing stage of binding having been completed, and when the edges have been smoothly trimmed, it can readily be accepted that something has been produced which is at least convenient to read. No manual skill is required to operate it, and it can be held near or far, as may best suit the reader's convenience and eyesight.

Protection, however, is needed for the assembly of pages, and the method adopted is to insert that assembly into a box-like structure which we know as the 'case'. To protect the printed leaves by placing them in a box does appear fundamentally to be a pretty good start towards protection. However, ease of access to the contents is a vital factor, and the box is therefore provided with hinged lids: that is to say, the boards of the case; but, instead of having four sides as in a normal box, there is only one side—the spine of the case. The pages are attached to the box at the point where the lids hinge, thus the swing of the lids and the pages are in unison, and there is no hindrance to access to the contents.

Nevertheless, there are obvious weaknesses in attempting to contain an assembly of pages, which of necessity are flexibly joined together, in a box which has three sides missing. The contents may not actually fall out, but would bulge out and look as if they were about to fall out unless steps were taken to overcome such a defect in structure. The method of overcoming the difficulty is to provide the assembly of pages with a concave shape on the front edge matched by a convex shape at the back, thus tucking the contents well into the box, and moreover, giving the agreeable and satisfying appearance that shows this object to have been adequately achieved.

It is a fortunate fact that, when in the rounded shape, the back folds of the sections of paper lend themselves by their nature to the bending operation known as 'backing', whereby the backs of the sections are splayed from the centre of the book outwards. Backing not only serves to hold the sections in their rounded formation, but provides a valuable protuberant ridge of solid paper on both sides, which I need hardly add are known as the 'joints' of the book. These joints form what in engineering parlance would be termed flanges, and the case of a book should be such a fit that these flanges firmly abut on to the edges of the boards. With such a construction the major part of the weight of the book, when standing upright, is carried by these flanges which lean against the back edges of the boards, thus taking the weight of the book and leaving little of the strain to the adhesives.

I am often asked what is the object of 'rounding and backing', and in this brief description I have endeavoured to explain fundamentally just what the

object is. It is not merely a traditional notion—on the contrary, rounding and backing has a most important function to perform.

Now that—a new look at a familiar object—I hope explains to you the fundamental principles of case-binding; and it will be noted that the main concern of the publishers' binder is in the structure of his product. Properly executed it adequately meets the specification—it is convenient for reading and handling, it is readily transportable, the pages are protected, it stores well and is of attractive appearance. It is not surprising that as changes in technique are tried out there is always an instinctive striving to make the new conform to the principles of the old, which, so far, have not been bettered.

It would appear there is something fundamentally satisfying in this form of binding, which would account for the fact that in general the public will have none of the flat-back variety, with its impoverished appearance.

PRICE

And what about the price of the binding I have just described? Well, in 1914 the average price of binding the six shilling novel, as it then was, was 3½d. to 4d. per copy. To-day, the price is around the shilling mark, which is roughly three times as much. But since those days wages have increased seven times, and materials by much the same proportion. These figures speak for themselves, and I would say that, if one sifts the facts, over the years, productivity per man due to mechanization has increased at least threefold and much of the increase has taken place in the last ten years.

RESEARCH

Speed of advance in machines and techniques is, of course, in the long run governed by economics. We see the immense sums invested in research to strengthen the national position in commercial aviation and in mastering the technique of atomic power, but at a glance it can be seen that none of the smaller industries can even start thinking of research on these lines. The world market for bookbinding machines is minute compared with, say, machine tools, to scale down the comparison, and it follows that it is impracticable to devote to bookbinding the same order of research as is given to machine tools or other major industries.

The self-adjusting binding machine, electronically controlled, is not as yet practical politics, but doubtless as time goes on binding machinery manufacturers will be able to borrow from the discoveries made in aid of larger industries, and the all-embracing press-button machine will be with us.

The market being such as it is, bookbinding machines are made in small quantities, are largely hand-made and thus very expensive, and a lot of trial and error takes place before they become reliable producers on the shop floor. Nevertheless, and in spite of these inherent handicaps, by all ordinary standards mechanization in bookbinding is of a high order, as a walk round a modern bindery readily shows. Binding is one of these processes which lends itself to mechanical inventiveness—I might almost say entices attempts by the mechanically minded—and plenty has been applied.

MACHINES

In general, progress has followed two lines. The first, of which we hear little, is those few specialized plants, largely in America, which produce a given book in enormous quantities, that is to say, true mass production. The machines are not adapted to deal with a range of sizes or thicknesses, and once started on a given product they are left to get on with it. They are usually initiated, and sometimes made, by the engineering departments of the book-manufacturers or publishers who sponsor the product. This sort of plant, due to its lack of versatility, is totally unsuited to supply the needs of the general book publisher, for whose work a very different sort of plant is required.

Publishers' binders are dealing with initial runs in the order of three to ten thousand copies, and quantities beyond that are the exception rather than the rule. When it comes to repeat orders a run of no more than a thousand may be involved, and even less.

Apart from the size of run there is considerable variation of page sizes, variation of thickness, type of paper, and so on, diversity being implicit in the making of books. For such work the binder's plant must be constructed to cope with variations of size and be readily alterable from job to job to deal with the comparatively short runs offered to it.

You will not be surprised to learn that this need for versatility adds to the complication of the machines. Every operating part which guides the book through the machine, and those that perform the binding function, must be made adjustable, and readily adjustable, to cope with a queue of jobs each differing in some and perhaps many particulars from the next. No Crown 8vo, even, is exactly like another Crown 8vo.

There is now an almost complete range of such machines, largely emanating from America, each dealing with an individual operation, and thus the jobs go from machine to machine until the books are completely processed.

If it is difficult and costly to build an adjustable machine to do one process only, the difficulties and complications are much increased if such a machine is to do two operations; and the mind boggles at the size, cost and complication of the adjustable machine which will do the whole process in one. As I have suggested, no doubt it will come, but not I think without considerable advances in the way of simplifying the technique of providing mechanical movements.

As a step towards the complete machine, devices are available for linking together groups of established fast-running machines whereby the books pass automatically from one machine to the next without intermediate handling. In this field the Smyth Company is outstanding. They offer, and have installed in some binderies, a range of linking devices enabling the books, previously cut and glued, to pass successively through five individual machines, thus performing as one continuous process the operations of backing, lining, casing, pressing and jacketing. If it is considered that no examination of the product is necessary, which perhaps is something of an act of faith, the books are forthwith packed.

On the other hand, operated individually, the same machines are generally staffed by an operator and an assistant. The operator, who is the modern counterpart of the skilled hand-craftsman, is responsible for the machine. His particular duty is the setting operation with the aid of the assistant. When the machine is running satisfactorily one feeds the books in and the other takes them out.

With the linked system there must still be an operator for each machine, as on changes of job all machines must be reset simultaneously, but a lesser number of assistants is called for, and moreover much floor space is saved as there are no stacks of partly processed work between the machines.

The points in favour are obvious, but there is the reverse side to the medal. The individual machines are by no means fool-proof, particularly when they are constantly re-adjusted from size to size; hence the speed of the whole unit is limited to the speed of the particular machine which, on any one job, may be causing the most stoppages, or takes the longest to set and get under way, as when one stops they must all stop.

In the original method whereby each machine is operated individually, difficulties experienced, say, in the morning on one machine may well be made up by an exceptionally trouble-free afternoon; and thus, by and large, no output is lost.

These are problems which the individual binder must settle for himself, but it would appear that linked machines are likely to prove more successful on long runs than on short. What the publishers' binder has to keep in mind is that, whatever his plant, it is of equal importance that it can be set quickly as that it can run quickly, and he ignores this restriction at his peril.

MACHINE COSTS

Now the object of all this mechanization is to produce cheaply—a problem of cost. A simple way of assessing the wage cost of projected plant is first to estimate the average length of run that can be offered to the plant. Let us suppose that it is 1,500, made up of a mixture of jobs varying, perhaps, between 10,000 and 500 copies. Thus before completing 150,000 books, 100 sets, including the time of getting up speed, will have been made, plus the time occupied in running off 150,000 copies, which must include time for inadvertent stoppages. The wage cost of that will be a certain figure, and a comparison can be made of the labour cost between different machines or different methods, the setting cost being included.

To the wage cost must be added depreciation and cost of maintenance of the machine, and the cost of the floor space occupied. The quality of the work the machine produces is, of course, of prime importance, as also its range of sizes in relation to the type of work it is required for. Lucky is the binder who knows the correct answer to all these points before he has committed himself to new machines and lay-outs! The economics of publishers' binding are not quite such plain sailing as our critics are inclined to believe.

I have endeavoured to sketch the lines on which mechanized binding is

developing, and of course the day of the craftsman on the bench for doing such work is long past, but so also is the day of really short runs, which, I fear is not of help to the publisher. However, if it were not for the machines, the cost of binding, whether the runs were long or short, would indeed be fabulous.

NEW PROCESSES

I will now touch on some of the recent innovations in technique. Since the war there have been some new processes and considerable speeding of existing processes.

Flexiback binding is a process whereby a cloth lining is applied to the back of a book immediately after sewing and, following lining, the book is cut and then backed. It has found many users and helped, after the war, in a marked way to satisfy the urgent need for more books. The machine for doing it, being British built, was available at that time, whereas the Smyth lining machine was not.

The Smyth liner, I would explain, follows the conventional hand method whereby, after cutting, the back of the book is glued and, when dry, backed. The book then passes to this liner, which first sticks on a mull lining, and on top of that a paper lining. As these lining operations are done after backing they assist the book to retain its backed shape.

The Flexiback process, and machine for doing it, were originated in my Company's Works in the middle 1930s, but the subsequent manufacture of the machine for the trade passed into other hands. The principal difficulty with Flexiback is to give the book a satisfactory and lasting rounding and backing, and I fear the initial attempts left much to be desired.

Later, an improvement was achieved by the use of expandable cloth. In this cloth the threads which lie across the back of the book are crimped in manufacture so that in the expansion needed in rounding and backing the crimp can pull out and thus enable the cloth to expand without splitting. This helped, inasmuch as it reduced some of the resistance to backing, but still did not entirely do the trick—so much resistance being caused by the glue alone.

A still later development in the process was the use of polyvinyl adhesives in place of flexible glue. The polyvinyl resists less than the glue and is an improvement.

Just about a year ago my Company introduced the Steamset process—a further development. In this process there has been a reversion to flexible glue and the expandable cloth is also used. Immediately prior to rounding and backing, steam is applied to the lining on the back of the book, thereby softening the cloth and melting the glue. In this condition neither the glue nor the cloth resists the backing operation in any way, and moreover they set immediately in the new and desired rounded shape. The cloth lining and the glue take on a somewhat steely, but permanently flexible character, and the joints of the book, which, as I have explained are so important to the appearance and soundness of the whole structure, are exceptionally firm and well formed.

This form of lining and backing, while adhering to the conventional fundamentals, produces a backed book of exceptional appearance and durability,

and as the plant has been so designed that it is an integral part of the backing machine, the advance has been obtained without extra cost.

Another process, also developing from the Flexiback process, is the reintroduction of unsewn binding. Basically, the idea is to eliminate the cost of sewing by the substitution of a process which costs less. Others who are actually binding by the unsewn method can speak with more authority than I, as my direct experience is restricted to experimentation and observation of production methods. But it is a subject of great interest and one I should like to deal with within the limits of my knowledge.

Unsewn binding, under the name of 'perfect' binding, has, of course, been with us for decades, but the introduction of polyvinyl adhesives in place of glue has much improved the product. In this form it initially came on the market under the name of Thermoplastic and owes much to the energy and drive of Mr. Richard Clay. There are now several competing machines for doing it, the magnet being to secure a hold on the paper-back market, for which the process is admirably adapted and, I believe, universally used.

The polyvinyl adhesives used are white, creamy, substances, which have the property of soaking into the individual leaves of the book, when the back folds have been cut off, and of doing so much more effectively than glue. Moreover, such adhesives remain permanently flexible, which is a most desirable feature. It is usual, as the books come from the machine, for the lined back to rest for a time on a hot plate to accelerate the drying of the adhesive. On papers suitable for the process—and care has to be taken in their selection—my observation is that the adhesion of the leaves is good, and I think the modern paper-bound book with its square back is smart and trim and well suited to its purpose.

When the process is applied, however, to cased books, something of the initial difficulties experienced with Flexiback binding are again encountered, and so much resistance is experienced from the adhesive and the lining cloth that a full round and firm joint cannot be reliably obtained. As Mr. Unwin has suggested, the process needs something to bring it into the standard binding class.

It may well be that in course of time these difficulties will be overcome, and it might be thought that the Steamset process would supply a solution. Unfortunately, however, polyvinyl adhesives will not melt under the application of steam, nor, for that matter, under dry heat. My experiments on these lines show that the polyvinyl, under the influence of steam, softens but becomes extremely elastic. Now the definition of an elastic substance is one which 'spontaneously resumes its normal shape'. This, of course, is just what is not wanted. In the rounding and backing operation, the book is required to stay in its fully rounded shape and not be pulled back.

It is unfortunate that glue is not a satisfactory medium for unsewn binding as it has a very obliging habit—it sets permanently after melting into any shape in which it finds itself. Others may prove more successful in this than I have been, but my experiments to produce books of conventional class by the unsewn method have so far proved unsatisfactory.

Unsewn binding and Steamset binding are the main innovations in the structural methods of binding which have recently taken place, and I will now turn to developments in other directions.

COVERING MATERIALS

Over the years there have been innumerable challenges to the supremacy of bookcloth as the universal covering material. A patent granted for one of these in 1846 specified that it was suitable for use on bookbinding, bonnets, curtains, theatrical decorations—and coffins.

I have no information as to whether this versatile material was actually used for any of these purposes, but, in any case, so far as books are concerned it made no lasting impact. Much the same can be said of many other challengers, with one notable exception—Linson. For the cheaper and medium class book Linson, in the course of a few years, has firmly established itself, and very well does it serve its purpose. In the bindery it gives rise to no difficulties and is, in fact, less temperamental than cloth. Its success is due to its flexible and durable qualities and to the fact that it is an excellent imitation of cloth. Imitation may well be the sincerest form of flattery but, I fear, that can be of little consolation to the cloth manufacturers. For the better class books, however, cloth still holds its place.

A long overdue improvement, required in all covering materials, is the production of a finish which is fully resistant to finger-marking, and without having to resort to a glazed effect. A pyroxylin impregnated cloth having a matt cambric finish was put on the market a few years ago, and this was very resistant. But the cost was a few pence a yard more than the ordinary grade, and I learn that it did not catch on. Moreover, there are subtleties in these things: the material was attractive to the eye but harsh to the touch, and it appears that pyroxylin is not the answer. One instinctively feels that out of the vast range of new substances coming from the plastic industry there will emerge the desired cheap material, or at least a dope which will give satisfactory results on existing ones.

PLASTIC BINDING

No review of bookbinding would be complete without mention of the use of plastic covering materials as used in Germany. The type of material used is reminiscent of, but much superior to, what is termed leathercloth. From it the Germans produce the limp bound form of book and a very attractive job they make of it. But as the material is expensive, I cannot believe the binding is cheap.

As I see it, limp binding over here is a type of binding which has gone out of favour. I refer to velvet-calf poets and the like, and there appears to be little demand for this style of thing. In this I may be wrong, but I have no doubt that if publishers can find a substantial market for such bindings, British binders will not be slow in developing the necessary technique.

BOARDS

From covering materials it is an easy step to boards, but to take adequate steps

to prevent them warping is more than difficult and, in point of fact, a complete remedy has not yet been found. There is not much warping when the books are used in this country, but when British bound books are exported to the United States there is often undue warping, particularly when they are kept in superheated rooms.

It must not be thought that American bindings are immune from the trouble, but they do warp less than ours. On both sides of the Atlantic there has been considerable research on the subject, but no new facts have come to light of recent years.

Very briefly, the cause of warping is that the components of the cover are first-class absorbers of moisture under humid conditions and eject the moisture with equal facility when the climatic conditions are dry. In such an atmosphere they expand or contract, each of the three materials—the cloth, the boards, and the endpaper—to a different degree, and thus distortion of the cover takes place.

A well made and well matured board is fairly stable under varying atmospheric conditions, and the thicker it is the better is it able to curb the activities of its companions, the cloth and the endpaper. The American chip board as used in the States is a more stable board than Dutch strawboard or the British board made from waste-paper. Further to that, American specifications provide for the use of a thicker board than is normal over here. Probably, in these two factors, lies the main difference in the behaviour of the two bindings.

A direct approach to the complete remedy would appear to lie in the use of a non-absorbent rigid material in place of the conventional board, and when that appears, at the right price, the problem is solved. Meanwhile, binders in mitigation of the trouble cannot do better than urge their customers to specify heavier boards and to take note themselves of the other recommendations made by P.A.T.R.A.

BLOCKING

And finally I come to the decoration of the book, the beauty which is but skin deep, but which can make or mar it. Unfortunately for the binder the development of the jacket has largely stolen his thunder, as after the publisher has exercised his extravagance on what used to be called the dust-wrapper he proceeds to economize on the binding.

I suspect that as binding is the last item in book production, it is also the last item on the publisher's estimate form and thereby takes what is left over. The efficiency experts might experiment, I suggest, with putting the binding item a few lines higher up the form.

Both in America and Germany publishers find it desirable to apply some embellishment to the book; but in this country the binder, only too often, has to confine his skill to making bare letterings as clean and crisp as possible.

Blocking departments to-day are mere shadows of what they were at the turn of the century, when no juvenile book was complete without decoration in four or five colours. In those days there were also a host of girls engaged in the delicate art of wafting gold leaf from its containers on to the cases in preparation for gold

blocking. This process is now completely revolutionized by the mechanical method of ribbon feed.

The manufacturers of these ribbons, foils as they are termed, are to be congratulated upon marked improvements in their product. The ribbon itself, known as the carrier, has deposited upon it the metal required for the blocking, real gold, bronze (for imitation gold), or aluminium, the latter to give the effect of silver.

It was only a few years ago that aluminium blocking was indeed a dull affair, but improvements in depositing the metal on the ribbon carrier now give results which outshine polished silver.

The carrier which two or three years ago was comparatively thick and, moreover, curly and difficult to handle, is now only half a thousandth of an inch thick, is convenient to handle and gives a crispness of impression not far short of the gold leaf which the method has supplanted. These improvements are very welcome.

CONCLUSION

Before concluding I would like to join issue with Mr. Philip Unwin on one point. I enjoyed his lecture enormously, but if I remember rightly he suggested that the chief need in the binding industry was a greater elimination of hand processes. If he had said the greater improvement of machine processes I would have been with him, for what solely hand processes are there left? Only the insertion of plates, the examination of the finished books and packing. I think it is fair to add jacketting to the list, as the short run machine has yet to make an appearance, but otherwise the industry is mechanized up to the hilt.

I say this with no sense of flattering the binding industry. The year is 1957 not 1907, and we would indeed be lagging behind if it had not been completely transformed in those fifty years. I have every faith that the new generation of binders will by no means be content with 1957 methods and will not merely maintain, but will accelerate, the march of progress.

THE DESIGN OF SHOPS TO-DAY

A paper by

ELLIS E. SOMAKE, F.R.I.B.A., F.S.I.A.,

read to the Society on Wednesday, 11th December, 1957,
with S. H. Leake, O.B.E., Chairman, Selfridges Ltd.,
in the Chair

THE CHAIRMAN: It is worth remembering that retailing represented a repressed form of activity during the war, and for this reason there was a partial cessation of new development in the form of shops for the eight years following 1939. There were, of course, many temporary structures and repairs as a consequence of air-raid damage; but the war created conditions which have since encouraged a break with past practice. How far and how wisely we shopkeepers have taken advantage of this unusual opportunity to think out anew the problems of appealing to the public, rather than perpetuate practices which were adopted between the two wars, is a subject we are to consider this afternoon. The design of shops is a problem of interest both to shoppers and to shopkeepers, and it covers stores as well as shops. Two months ago my group opened a new department store in Bristol which embodied our experience of many years. Ten days later I was in Rhodesia on a holiday and was shown over an African native store. Both buildings are described as stores, both are centres of attraction within their communities, both have loud-speakers relaying gramophone records, both fulfil their purpose admirably, both carry too much stock of certain lines and too little of others—so who is to tell the difference between them?

Mr. Somake is the architect for a well-known group which trades under the name of 'Dolcis', and a recognized authority on his subject.

The following paper, which was illustrated with lantern slides, was then read.

THE PAPER

All of us spend a large proportion of our lives shopping or shop-gazing. Shops have formed a part of the architectural scene throughout history—they are a part of life, a serious business for some and a necessity for all. A shop is fundamentally a simple thing; it has always consisted of a shelter, with an entrance front to advertise and display the business within, a sales room where customers can inspect and buy the goods stocked there, and a service entrance for incoming and outgoing merchandise. How well it integrates these three basic requirements is a test of its functional fitness. But the design of the ideal shop is a constantly changing concept, for varied ways of living, trading and travelling in each age have demanded a different solution.

Perhaps I should explain: not so many decades ago all trade depended upon personal contact between buyer and seller—the latter with a small business based on home manufacturing and home retailing. There were no wholesalers to supply their merchandise; no national advertising to boost the sales of their products. Consequently their shops were restricted in scale and character, with shop windows scarcely larger than those used for dining or living rooms—in

fact, the shop was yet another living or work room in the house. The shopping streets of any city up to 1850 reflected this small-scale system—indeed some do even to-day; they were pleasing to the eye, buildings were uniform in style and character, colours and materials more restrained and signs less blatant than those to-day. The rapid growth of manufacturing which followed, and the development of rail traffic, enabled manufacturers to distribute on a national scale. This led to new ways and means of retailing and thus the general or department store was born. Small shops were seriously threatened by the greater buying power of the big stores and in self defence they also turned to diversified sales—men's clothing stores added shoes and hats, the druggists toilet equipment and even libraries! Later they linked together under common management and brought the multiple or chain store into being. But department stores did not have everything their own way; the more personal services of the little shop with sometimes that hint of exclusiveness did much to worry them, so as added attractions they installed lounges, restaurants, travel and inquiry bureaux. All this added up to one thing; it needed more than just merchandise to attract customers into a shop—their comfort and entertainment became equally important. As a result, and coupled with the availability of new building materials, it was only natural that this should lead to a wave of remodelling—in particular in the design of shop fronts. It was possible to obtain large sheets of plate glass, metals such as aluminium, bronze and stainless steel, and armour plate-glass entrance doors.

In the shop of to-day the integration of form and function, of new ways of trading with new methods of building, is approaching maturity. A new generation of architects has, by opening up the store front (and by that I mean discarding the old idea of solid window backs and thus uniting the exterior with the interior sales space) disproved the old theory that the shop front was one thing and the store inside another. The success of shops they have built has been measured by the takings, and there can be no doubt that this is the reason why more architects are being commissioned to design shops to-day than ever before. The impact of *good* design in this sphere can be tremendous. Because everyone looks at shops, the interior now revealed cannot fail to be a most influential piece of architecture—a popular free exhibition of contemporary design. Undoubtedly the modern shop interior has suddenly made the contemporary style in architecture real and acceptable to the general public—the crowds in Oxford Street, the masses in the suburbs and provinces.

Since the war we have had the opportunity to rebuild our shopping streets, to develop new shopping centres planned for contemporary living, to give the department store a more appropriate physical expression and finally to restate the old problem of the small retail shop in fresh and interesting terms. All this can only be done by intelligent design. The modernization of shops in already established shopping centres has always been rather a piecemeal affair, where every year that has passed has added a few examples to the street scene; in the development of new towns and shopping centres there has been the opportunity to build whole series of shops at one and the same time; in both cases with few

exceptions it is a great pity to find the general standard of design so mediocre.

The basic function of any shopping centre, or even street, is to provide a place or locality where citizens may exchange money for material goods displayed in such variety as to give freedom of choice. From the shopkeeper's point of view the basic function is to make money for himself, his assistants and possibly his shareholders. To this he would add that his function is to provide a service to the community, as indeed it is; but this service will not be performed unless he also makes a profit. In the performance of his function the shopkeeper needs a location in a busy position which is easily accessible both on foot and by public transport. By being in a shopping centre he has the advantage in that the public is attracted to his shop by his neighbours and by services and amenities which he cannot himself afford to provide.

What are the conditions that attract the shopper? First of all (and as the majority of shoppers in this and any country are women, perhaps you will forgive me if I refer to the shopper in the feminine gender) she expects that the centre will be easy to reach, with a place nearby where—if she is fortunate enough to possess one—she can park her car; having got there she expects a group of shops with attractive window display and a variety of merchandise, space in which to walk freely up and down 'window shopping', and pleasant shop premises in which to make a purchase. She expects the atmosphere of the shopping centre to be attractive, cheerful if not gay, busy and safe. In addition to these facilities and this atmosphere, the shopper will be attracted to the centre by cultural and entertainment facilities such as the library, the restaurant, the cinema, and the meeting hall. It is important to recognize that the shopping centre is a social as well as a business centre. Gossiping over the shopping basket can be an important social function.

Broadly speaking there are two types of shops in existence: the comparatively small unit which deals in a limited range of related merchandise, or even one which carries unrelated lines to a limited extent—the speciality shop; and the enlarged variety store or multiple speciality shop; both of which are basic types of department store.

Dealing first with speciality shops, which form by far the greater proportion of shops in any locality or centre, these range from the low-priced popular goods store to that catering for an exclusive clientele; from the store offering individual attention to one where personal service is at a minimum or is entirely self-service; and from the multi-floor fashion store to the smallest unit, little more than a room in size. These speciality shops fall into three broad categories: those which sell one line—the bookseller, florist or dress or hat shop; those which deal with various lines—the chemist, grocer, or food and provision store; and finally, those which provide a service, such as the optician, hairdresser and dry-cleaner. As there are many different types of goods and services sold, so there are as many different kinds of speciality shops, but all of these are basically organized on the same lines, their different components all following a similar pattern whatever they sell. The main basic requirement of these speciality shops is that they should make an impact on the public. Everything about them should

state clearly at first glance not only that they exist, but that they exist to be noticed. They must embody the three elements of successful shop design—what the Americans call 'the three A's'—Attraction, Atmosphere and Appraisal. (You will be hearing more about these as I proceed.) The department store is the equivalent of an entire series of speciality shops. Instead of offering diversified merchandise in a single field, a department store stocks a complete range of shopping goods under one roof. But in broad principle the design approach follows the same trend as that applied to the speciality shop.

Let us now analyse the various components of a shop, commencing with the shopfront. Some of us can still remember the streets where merchants met shoppers half way—right out on the pavement, in fact. Once contact was established *via* coat-sleeve or lapel, the battle was on; the prospective customer struggled to escape, the merchant to drag him in. Sometimes sales resistance prevailed, and sometimes salesmanship, but whatever the outcome, the idea of the salesmen was basically sound—they believed that if a passer-by could be exposed to some sort of salesmanship he might buy something. And although these methods seem to us to-day to be somewhat dated, are we not in actual fact pursuing exactly the same method?—except that we are using the modern shopfront as our salesman—of course, better dressed and better mannered—but still a salesman who, by exposing the passer-by to the calculated appeal of the window displays, silently, firmly and persuasively induces her to enter the shop and buy?

The shopfront itself comprises the fascia, the sign, the display windows, the lobby and the whole approach to the entrance. The importance of these units and their relation to one another will vary from shop to shop, but whatever form it takes the shopfront has a very precise job to do.

Firstly, and here comes the first 'A' I mentioned earlier, it must be attractive and eye-catching. In a street crowded with shops of all kinds, each offering competition in some form or another, it is not an easy matter to attract attention. Investigation has shown that a typical shopper takes less than seven seconds to pass an average shop frontage on foot, or, if in a motor car, three seconds or less. Obviously to attract attention in this short time the shopfront must put into practice every principle that will draw and hold attention. Within the limitations of space, location and income level of customers an architect must create something new, something different, something better that will make the shop he designs stand out from all the others. In order to be attractive the shopfront must possess the following attributes:

(1) It must be an individual frank design of the shop's specific operation rather than an adaptation of some other shop.

(2) It must make a favourable impression on customers in order to attract them to the show windows, invite close and detailed inspection of the displays and create a desire to enter.

(3) It must be an integral part of the interior rather than a separate entity.

The type of customer and the neighbourhood determine to a great extent the character of the general design that will be most successful. In addition, the

FIGURE 1. *Dolcis, 159-63 Charing Cross Road, London. Architect: Ellis E. Somake, F.R.I.B.A., F.S.I.A.*

physical proportions of windows, the selective use of materials, refinement of detail, type of background and the colour scheme as well as the method of lighting are all factors that must be carefully considered in order to create in the customer a favourable impression of that particular shop.

Atmosphere, the second must, is one of those intangibles that induces a customer to shop in a particular store.

If we consider the shop windows as a stage for displaying merchandise, we can readily understand that every appropriate device, as well as the principle of applied psychology, must be used to dramatize the merchandise. Here again, the quality of atmosphere must be in tune with the type of customer and the specific operation of the shop. Every operation has its accepted symbolism—the sweet shop, the jewellery shop, the book shop, are all different in general appearance. In the architect's language the function of atmosphere is to develop, heighten and enrich their differences and distinctions. Atmosphere is one of the keenest tools of selling. Here are some of the things one can do for a shopfront to ensure the proper atmosphere:

(1) Provide a harmonious treatment: the shape and height of windows and displays must be suited to the type of merchandise; the design of the sign, the arrangement of the lobby, the position of the entrance door—all these contribute to making a shop more inviting.

(2) Increase the appeal of merchandise on display by means of forceful yet subtle dramatic effects, such as spot lighting and suitable background materials.

(3) The design of window backgrounds, whether open or closed, requires careful planning.

(4) The proper selection of materials and colour schemes exerts a forceful impression on the customer's interest and puts her in the mood to buy.

Naturally the atmosphere inside the store must carry through the effect obtained in the shopfront and thus ensure a favourable and lasting impression of the entire shop.

The third 'A' and aim of a successful design of a shopfront is that of appraisal—the provision of means whereby customers are enabled to appraise the merchandise; it is that quality which transforms admiration and desire into a decision to buy. This quality is also the means of identifying the shop, and it thus possesses definite advertising value. It is well known that the customer is always on guard—she wishes and indeed has the right to compare the prices and quality of one shop with those of others down the street. All other things being equal, a well-designed shopfront will give that added appeal to the merchandise which encourages the customer to shop in it; and to this end every possible arrangement should therefore be made for the customer's comfort and ease of seeing:

(1) The windows may be moved back from the building line, thus enabling the customer to window shop without being jostled by passers-by.

(2) Glare and reflection should be reduced to a minimum (I say 'reduced' because it is impossible to eliminate these altogether).

(3) The floor plan, which is the basis of the entire design, should be carefully considered from the customer's point of view; certain physical conditions, such as steep ramps and steps, must be eliminated if possible. As I said before, the position of the entrance door is most important and should be strategically placed so that the customer is inside the shop even before she realizes it.

Enabling customers to appraise at their leisure has another important function: it indicates to the public the type of operation, it adds prestige and gives customers a feeling of the shop's trustworthiness. With merchandise so largely standardized, as it is to-day, and prices almost uniform, it is most important that the customer should shop in this particular shop rather than in any other.

Every shop needs a sign in order to identify it and distinguish it from its neighbours. Shopkeepers used to believe (and possibly still do) that the best method of presenting themselves to the public was to blow a very loud trumpet and display the biggest and most blatant sign they could afford. They believed in the old American jingle:

> He who whispers down a well,
> About the goods he has to sell,
> Will never make as many dollars
> As he who climbs a tree and hollers!

No one would dispute the basic truth of this over-simplified adage, but in these days it is realized that the sign should be an integral part of the design so that a harmonious whole is achieved. The average sign normally presents the name of the firm or company operating the shop; some add a message identifying

their trade, whilst others, as is common in Denmark and elsewhere, merely identify their trade—such as Baker or Chemist—without the addition of a name. The actual treatment of signs can vary between the large publicity placard advertising the shop and a mere identification tag, usually with a trade mark or insignia; but in all types perhaps the most important factor in good design is the lettering. Christian Barman, in his admirable paper on Public Lettering read to this Society some two years ago, illustrated this vital point most clearly. The actual type of sign chosen must depend on the operation of the particular shop and upon its neighbourhood.

Of course, all the factors I have mentioned form only part of the story; the other and more flexible part is that played by the art of the window display artist. It is he who paints the picture within the architect's frame, and the closest co-operation between architect and display artist at the earliest stage of shop-front design is essential. The display artist's contribution can vary between a few well selected examples of merchandise attractively and colourfully displayed, and a window crowded with samples of almost every item the shop sells. Which it is to be depends, here again, on the location and type of operation.

A shopfront properly designed can stop the public, and a well-planned lobby can help draw them inside the shop, but the interior must also play its part in presenting the goods in such a way that they almost sell themselves. The *whole*

FIGURE 2. *Ladies' apparel department, Landport Drapery Store, Portsmouth. Architects: T. P. Bennett & Son*

effect should be not only inviting but irresistible. Having passed through the entrance door and arrived inside the shop, the customer is soon, we hope, enticed to purchase, for whether she comes merely to look round or with a defined objective she is to be tempted to buy. The whole layout of the interior must conspire to attract her to the merchandise, allow her to examine it, draw her to buy, and finally create pleasure in her mind in order to bring her back again. Because it is the purchase of the extra impulse items which can make all the difference between good and bad turnover, she should find all the articles she would love to have, placed where her eyes can hardly fail to see them, as she passes on her way to the goods she needs. This is the basic rule behind the planning of any shop or department store, however large or small. Impulse goods in the foreground, demand items to the rear, convenience merchandise between; selling space forward, customer facilities variable but with a long approach, and staff and stock rooms well out of the way. Impulse merchandise comprises perfumes, jewellery, gifts, gadgets, etc. Foods and drugs are typical convenience items stocked for the convenience of the passer-by who happens to come in, and who may return as a regular customer if suitably impressed. Merchandise in the demand category includes clothing, furniture and household equipment.

Shops are unique building problems because they are planned for moving traffic—shoppers are always on the move except at the actual point of sale. It is important therefore that clear traffic routes within the shop should be maintained. Each department should be planned as a separate speciality shop properly located on the shopping street.

One cannot discuss the design of shops to-day without commenting on the comparatively new technique of self-selection and self-service. The super-markets have revolutionized food retailing in the United States, and more recently in Britain and the rest of the world. This method of selling, which assists greatly in effecting economies in retailing, has to some seemed a serious threat to the speciality shops and department stores with their high expenses, and a solution has been partially found through the introduction of the same methods as are used by the super-markets themselves, but with a different category of merchandise. In other words, the greatest reduction in selling costs has been achieved by making the stock accessible to the customer. In order to reduce the comparatively greater cost of distributing the lower-priced article, not only by utilizing less sales effort, but by selling more so that a higher total of gross profit would emerge, it must be so arranged that the customer does more of the work. This is achieved either by encouraging to the utmost unaided selection—or self-selection; or by making her serve herself completely—that is, self-service. By making the customer do more of the work, the assistant is able to deal with more than one customer at a time, and thus an important economy in selling is created, with the result that less assistants are required to give efficient service to the customers. This method of selling is catching on so rapidly that there does not appear to be a single type of article of popular merchandise to which it cannot be applied in some form or another. It has been proved that with good packaging the enhanced attractiveness given to the merchandise, and the exercise of choice

without sales pressure often imposed by the presence of an assistant, usually result in increased sales. The customer, for whose time the shopkeeper bears no cost, can at her leisure appraise and select the goods in which she is interested. She needs the services of an assistant only when her mind is made up. From the customer's viewpoint, the closer contact with the goods, the longer time available to examine and decide to buy with no pressure from an assistant, go a long way towards making shopping of this kind an attractive pursuit.

FIGURE 3. *Special display unit at Liberty, Regent Street, designed by Hulme Chadwick*

A well organized sales floor must necessarily be packed with the greatest possible amount of merchandise without giving the impression of a warehouse. Yet the merchandise must be right on the spot, within easy reach of both the customer and the shop assistant. It is obvious therefore that the fixtures must be in all ways related in form and function to the goods they hold. Fixtures have three functions to serve—they must store, display and protect the merchandise from dust, accidental breakage and too much handling. No unit should be allowed

to dominate the goods it carries; it is essentially the merchandise which is important and not the fitting. Some items, such as carpets and major household appliances, will not require any fitting or may need only a display platform. In all cases, it would be ideal if the fitting were not visible at all; but since it has to exist, it can and should be used to enhance the appearance of the goods in the same way as a well-designed package. It does not follow that every sales fitting will perform all three functions mentioned previously. The refrigerated case for flowers or food is one of the few fixtures that must actually store, display and protect its contents at one and the same time. The counters or racks in a self-selection shop hold the merchandise but do not protect them; indeed in this case customers are encouraged to handle the items. At the other end of the scale the exclusive shops use their sales counters purely for display, the merchandise being stored underneath or even in another fitting. In between, the average fixture in the average shop contains a top layer of display set on an enclosed space for stock storage. The tendency towards self-selection is making counters lower than in the past in order to accommodate the trays at the best level, and is probably also making the solid front or non-display counter gain in popularity. It is now generally accepted that island fittings should be kept low, so that they do not impede vision of other departments, and also so that the top of these fittings may be used for display. Wall fittings can, however, be of any convenient height, but preferably not greater than seven feet, the maximum which can be reached without using a ladder.

It was inevitable that the handwork and craftsmanship of the past should give way to the machine processes of to-day. The shopfitting trade has always been renowned for the excellence of its work, and it need not be feared that the increasing use of mechanical tools will result in poor furniture. Indeed, some of the new materials, such as laminated plywood, possess characteristics of strength and lightness which were very difficult to achieve in solid timber. All units should be built of durable materials selected to withstand rubbing, kicking and other damage caused by customers and staff, but at the same time they should be as light as possible both in appearance and in fact.

In addition to stock units and counters there are items of special fittings which come within the category of aids to selling, and serving the customer. These include chairs, tables, mirrors and ashtrays, and in special cases such as shoe shops, footstools and X-ray machines. Their basic functions are first to aid selling, and secondly to assist in the comfort of customers, to give atmosphere to the shop or store, and to make shopping as attractive as possible.

Lighting sets the stage for shopping; the correct lighting can create the entire character of a store. Good lighting must be a real sales help, rather than a sales obstacle, since the chief function of shop lighting is to sell merchandise.

There are three elements in the perception of all form—luminescence or overall lighting, the glow or splash of light, and the point of glitter. Luminescence is shadowless illumination corresponding to misty morning light in nature and to indirect lighting of all forms in building. As can be seen from the cyclorama in the theatre, it minimizes form and bulk, suggests infinity and is restful. Glow

FIGURE 4. *Men's shop, lower ground floor, Dolcis, Piccadilly, London. Architect: Ellis E. Somake, F.R.I.B.A., F.S.I.A.*

is direct illumination, the shaft of sunlight in nature, the pool of light beneath a street lamp. It produces highlight and shadow, giving meaning to form and bulk, drawing attention and aiding judgement. As a single source is multiplied to cover the whole of a floor, and light from one source overlaps and merges with the next, it becomes akin to luminescence. Glitter is self-explanatory: the changing light of the chandeliers of the past, the play of sunlight on water, the starlit sky. It excites the spirit, stimulates, distracts and entertains. These three elements of light brought together in the right balance can create any atmosphere, and with colour to reinforce or tone down their effect can magically transform the most unpromising material. More important, however, is their effect on the customer in creating the right state of mind, reassuring, informing and exciting interest. The use of increased brightness in a specific area, the attraction of glitter in others, and the drawing power of perimeter lighting, are essential to the creation of a fine interior. Lighting is not a matter of windows or fittings, not just another service to be provided, judged by efficiency alone and measured at so many lumens to the square foot; when combined with colour it is the very essence of contemporary architecture, and the most powerful weapon in the armoury of the salesman. When we apply these principles to the interior it will be seen that we must attempt to achieve something more than just a dull uniformity of lighting. When shops changed over to fluorescent fittings in the

first enthusiasm for something new and economical to run, it was uniformity and lack of shadows, rather than the cold quality of the light itself, which created the morgue-like atmosphere which repelled so many people.

Lighting can contribute to a sale in three ways: firstly, by giving a customer a good first impression of the sales space it has the ability to attract the shopper into the store, direct her to the various departments and show her merchandise being offered to the best advantage (can you recognize our first 'A'—*attraction*?). Secondly, by making the store a pleasant and desirable place in which to shop, stay longer and return more often, and by creating a desire to buy—*atmosphere.* Lastly, by helping the customer to appraise the merchandise; which is to say it must help the shopper see the inherent qualities of the merchandise and help her to make buying decisions more quickly and accurately, thereby creating customer satisfaction—*appraisal.* Those shopkeepers who hold the opinion that lighting is merely an overhead expense will undoubtedly feel that the application of the three A's will be too expensive. But if they classify their lighting as it should be classified—a sales investment—they will realize that their money will be well spent indeed. Proper lighting is a matter of quantity and quality; enough foot candles for the shopper really to see and see well, and light of the proper diffusion and direction so as not to distract from the goods being offered. A very important factor of lighting, now that fluorescent equipment is so widely used,

FIGURE 5. *Norris the Florist, Marylebone High Street, London. One of the most advanced examples of the trend towards exhibition technique in shops. Architects: John E. Beardshaw and Partners*

is the colour of the light source, and it must therefore be considered most carefully. It can be of the greatest assistance in the sale of merchandise, but only if used correctly.

Modern lighting causes new problems—the incandescent lamp generates heat which, however welcome in winter, can cause much concern in the summer. The shop of to-day demands a measure of ventilation to keep conditions comfortable. In the British climate full air-conditioning is often felt to be unnecessary, but provided there is space left for the additional machinery this is something which could always be added at a later date if required.

Apart from the large store the heating of shops in the past was something that was unfortunately ignored, and it was left to the shopkeepers to install a few gas radiators, usually dotted around in the most inconvenient positions. Proper and adequate heating is essential to-day, and the units should be planned in order to fit in as part of the general design. Where complete freedom from obstruction is required, the low temperature floor heating system, comprising wiring embedded in the floor which charges the structure with heat during off-peak hours, is well worth considering. The problem of heat losses versus the open entrance has been solved in recent years by the introduction of the air-curtain doorway, which has resulted in the orthodox entrance door being swept away. Briefly it consists of a lobby some eight feet deep, with a low ceiling which is louvred, the floor being a closely divided metal grid. Warm air is passed through the ceiling and extracted through the floor, creating a warm air curtain which allows the heat of the interior to be retained without in any way impeding entrance into the shop, even if the customer is pushing a perambulator. The entrance is closed at night by a sliding or rising wall, which can take the form of a glass screen, can incorporate doors, or may even be a display window or showcase. Heat loss by this method is said to be only 25 per cent, which would be less than that caused by most doorways, even when lobbied. The air-curtain doorway can be considered as the most important development in the shopfront of to-day.

The colour scheme of a shop is very important. Colour has the power of creating and changing moods. It can stimulate, enervate, sooth, sadden, aggravate and make joyous; in consequence, what many people do in a given situation can be strongly affected by surrounding colours. Colour can be used to emphasize or to change proportions, to enhance display, to form a background and to give atmosphere, and to put customers in a buying mood. It is now quite usual to treat walls in contrasting colours, sometimes using very strong tones. This is not just a whim of fashion, but a sign that the feeling of enclosed space has been the subject of more careful study than has ever before been given to it. The old conception of any room was that of a box, elaborated by openings in its sides, and possessing an essential unity between all its surfaces. The ceiling was usually united to the walls by a cornice treatment and to the floor by a deep skirting. The modern conception is one of a space enclosed by opposing planes, all of which are essentially different in character. This important development in thought is having a great effect on the design of buildings, and is internally the

FIGURE 6. *A typical self-service food store. The Metal Box Co., Baker Street, London. Architects: T. P. Bennett & Sons*

most eloquent expression of to-day's architecture, which uses contrast as the basis of its vocabulary. It has swept away the cornice and the picture rail, reduced the skirting to a protective rail, and given a new richness to interiors.

Well, there we have the elements which make a well designed shop of to-day. Such shops, when built, illustrate how sales methods all over the world are undergoing a revolution. They have fired the imagination of the shopping public, who are showing signs of the greatest interest in this new trend of shop design. But there are not enough examples yet in existence. You have all seen shops such as I have advocated scattered around the West End and smarter suburbs, but let us look at the 'typical' shops anywhere, and we shall find the true state of affairs in an endless procession—mile after mile, street after street. This is not just where the other half shops—it is where the other 99.9 per cent shop. And most of these shops, although lightly touched by bygone fashions, have been untouched by designers or architects.

I feel I cannot close without making a few comments on the shopkeeper—the architect's client. He is as much a party to the success or otherwise of a new conception and much depends on him and his outlook. The path is not easy—everyone is ready to criticize—but he must be brave. After all, good design is good business, and good design need not cost any more than bad design. From the shopkeeper's point of view, good design is merely the result of his taking trouble

with the selection and appointment of his designer or architect, and of clear description of his problems; and the right choice can pay good dividends.

But where does the architect come in? He is a specialist who takes ideas by studying the client's requirements, and from them evolves a design whose instruments, the drawings and specifications, enable the builder to erect the tangible structure. The architect must be an artist, an economist, a dreamer and yet a realist. He must have a sense of colour and design, and be practical in selecting materials. His artistry must further—it cannot be permitted to conflict with—the fulfilment of function. His work is judged by the people who use his creations, by those who just admire the architecture, and by those who pay the bill. His success can only be measured by the result of his work, and if he has been able to please everybody, then the impossible has been achieved.

DISCUSSION

MR. R. L. C. TATE: As a lighting designer I was impressed by the large place taken by light in Mr. Somake's talk. I wonder if he has any comments to make on the integration of the lighting in large selling stores? The slides that he showed us were nearly all of specialist shops. I have found that the integration of the display lighting and general lighting in large stores is an extremely difficult problem, and it is not eased by the fact that in most cases the architect feels himself entirely responsible for the general lighting and the store manager for the display lighting. Has Mr. Somake any views on the possibility of early collaboration between store management and architect in the design of these particular shops?

THE LECTURER: The reason why we saw so many speciality-shop lighting slides was because I know more about that form of lighting than about store lighting. I believe it is essential that there should be the closest co-operation, not only in lighting but in every aspect of planning, from the very earliest stage. Stores are difficult things to light, because very often when a store is being designed, the architect (unless he is very clever and has pinned his client down to actual facts) does not know precisely what merchandise is to be sold on each floor. But with early co-operation these matters can be settled at least in broad principle. I think the greatest flexibility in lighting should be permitted. This means only one thing to my way of thinking—a regular lighting pattern over the whole of the ceiling which permits the floor layout to be changed—unless, that is, one uses the flexible 'Rotterdam' ceiling, and enough floor plugs on a regular grid system on the floor to make flexibility possible in a different way. The keynote, then, is flexibility; but even more important is co-operation with the designer at the earliest stage.

MR. SYDNEY CLOUGH, F.R.I.B.A.: I wonder if Mr. Somake has any experience of heating the pavements outside a store, so that in bad weather (particularly snowy weather, such as they get in New York) the customer is encouraged to stand there rather than walk past, and thereby induced to enter the store?

THE LECTURER: No personal experience; but I have seen a heated pavement in Toronto. It was outside a bank, because, I suppose, the bank could afford such luxuries and the stores could not. It was quite dramatic to see an otherwise completely white pavement suddenly show clean and dry stone. I have also seen in Manchester a canopy above a store front heated by means of gas heaters, which encourage people to stand under the canopy on a cold day. But I should have thought that it was better to get people into the store rather than encourage them to stand outside!

MR. L. N. FRASER: Mr. Somake touched upon the problem of bringing the goods in and despatching them. May I ask if he thinks that service to the back of the shop is essential, or whether, with the modern design of shops, it is possible to bring the goods in at the front? Secondly, is the colonnade treatment out of date? By this I mean a continuous colonnade at ground level which provides space for widening of the street at a later date, thus avoiding the need for a great demolition if this happens?

THE LECTURER: In reply to your question as to whether service should be at the front or back: this is surely a question of traffic control? Car-parking is a very serious problem to-day, and it all depends on whether the shop you mention is in a pedestrian way or in a normal street. If it is in a pedestrian way, of course, goods cannot be brought in from the front, except by hand. If it is in a normal street the problem of car parking arises, and you arrange for your van to be in front of your shop at the right time only to find someone's motor cycle there! In replanning our towns I think it is essential that all service entries should be by means of a private road at the rear, used exclusively for the delivery of goods.

The colonnade is not an old-fashioned idea, in the accepted sense of that phrase, though it was used many many years ago (I am not sure when the Chester example was first built). A colonnade *is* an old architectural feature, but it is also, I hope, going to be revived. The customers' comfort in all weathers is something which has never been studied by town-planners in the past and is receiving a lot of attention to-day. The colonnade is the right answer to that question of comfort, quite apart from its adaptability if the street is widened in the years to come. I hope the planners of to-day are planning for the next 100 years at least, and I hope that the colonnade will stay.

MR. FRASER: The point about the colonnade is that it allows the owner to have the use of that portion of the land which may not be wanted for highway improvements for a number of years. I agree with planning for a very long time ahead, but of course if you deprive the shopkeeper of the use of some of his land and make him set his shop back, say, twenty feet—that means a lot of money for compensation, which in fact is not warranted if he can put up a temporary ground floor shop for twenty years, or fifteen, or whatever the period is. This was in my mind when I asked the question.

THE LECTURER: I thought you were talking of new town-planning—of planning for to-day and to-morrow. There are many present examples of cities where streets are being widened. There is a case in Bedford where half the street is set back, and the other half will also be as soon as it is rebuilt. The local authority is demanding that everyone who rebuilds now should set back immediately. This would have a most unfortunate effect on one side of the street. It would involve shops sticking out and going back, and the poor shop in the corner of a shop sticking out would not get the flow of traffic past it. In such cases I agree they ought to allow temporary use of that forecourt until such time as the whole street has been set back to its new line.

MR. ARTHUR SYMES: I should like to ask whether Mr. Somake foresees the development of self-selection in trades where it is not at the moment in operation?

THE LECTURER: I think it is inevitable that self-selection will come into many new trades. If, a year ago, you asked me whether it was possible to sell shoes by means of self-selection or even self-service, I should have said, No, because of certain difficulties. But the experiment has now been tried, and it has been proved that women are perfectly willing to buy their shoes off a shelf; not perhaps the most expensive shoes, but those at average prices and even those higher than average. If such a system can be applied to shoes, it could be applied to most things. Marks and Spencer apply it to the whole range of clothing. I cannot think of any form of

merchandise which cannot in some form be sold by self-service methods, or even by self-selection. I think it is bound to come. Whether it will last is another matter.

MR. ROLF HELLBERG: Returning to the question of colonnades: I think we must accept it as inevitable that covered shopping will become more and more popular. Whether the cover is in the form of a colonnade or a projected canopy is, I think, unimportant. The colonnade is particularly useful when it has a very dark ceiling because it provides an effective contrast to the brightly lit windows of the shop itself and can be made to absorb reflections from the display windows. That is, of course, provided that there is no pavement lighting put in the arcade itself. I think the objection in the past has always been from shopkeepers who said that the colonnade hid their fascias. Just recently in Ontario we swept back some shop fronts about nine feet inside the existing frontage. In other words, we created a false colonnade, the purpose of which is to keep the people who are actually looking into the shop out of the severe weather in the winter and also the great heat in the summer. It also, of course, protects the merchandise. This colonnade gave us a dark ceiling and allowed us to put in infra-red gas heaters, which made the place a most attractive one to stand in during the winter. I think all those points might very well be borne in mind for the future.

MR. R. BENBOW: I wonder if Mr. Somake can suggest any modern method of combating condensation on windows, other than the already generally known treatment?

THE LECTURER: We know what causes condensation—the fact that the temperature differs on either side of the glass; and in a modern motor car this can be adjusted by a demister which permits a thin curtain of air on the inside of the glass, thus equalizing the temperature on both sides. This is a problem of ventilation, and I think it has been solved by having nearly one hundred per cent ventilation at the foot of the window, as close to the glass as possible, and having similar ventilation at the end of the window to let the warm air out. You thereby create a curtain of air equal in temperature to that of the air outside the window. I have been using this method in every shop I have ever designed, so have many other people. It is a detail which should not be forgotten in a properly designed shop. One seldom sees a steamed-up window to-day.

MR. A. BULLOCK: I am interested in heating air-vents and air-curtains. For instance, in two of our main thoroughfares there are shops with 'bus stops immediately outside their front doors, and in any talk about putting these air curtains in, we are horrified to think that we shall probably just create a nice warm place for people to stop, and thus obstruct entrance to the shop. I should like to know whether anybody has any views on that.

Secondly, we spend a lot of time keeping one man busily employed in nothing but collecting 'bus tickets. I wonder what would happen if the grid below should catch these tickets and obstruct the hot air flow?

THE LECTURER: The only air-curtain doorway I have seen is in Croydon. I think it is the only example in London to-day. My colleague, Mr. Hellberg, has, I believe, seen them in Zurich, and other friends of mine in the audience have seen them in different parts of the Continent. So I am speaking with little experience, and more on hearsay, when I answer this question. I understand that the volume of air has to be of such speed as to form a definite curtain, so that the warm air coming down cannot filter out to the street—it has to come down and be sucked out, thus there is a curtain of air. Now that (apart from temperature control being an invisible curtain) does also control the dust, and if it is of the right velocity, then 'bus tickets and the like should be sucked down through the grating into the plant filters below, which are cleaned out at intervals. That is hearsay. I am told that is how it should work.

MR. ROLF HELLBERG: 'Bus tickets would not in fact pass through the grill, for it has to be a very fine one. Substantial dirt, such as that off the shoes, falls out of the air-stream before it goes through the filters below the doorway. The great merit of the air-curtain is that it prevents dust and rubbish from passing from the street into the shop.

MR. BULLOCK: The other point I should like to ask Mr. Somake concerns lighting, especially fluorescent lighting of a floor. Would he agree that the right thing to do first is to put in all-over lighting? The reason I ask is because no store that I have ever known leaves a department where it is for very long.

THE LECTURER: That is the most vital problem of all, and that is why I mentioned flexibility. If one could evolve a lighting scheme whereby one had complete flexibility of lighting pattern (and I think the Rotterdam ceiling has come nearer to that than any other), then one would be much nearer solving the problem. But there is also the shopkeeper who likes to alter his store plan, even when he has the facilities of a Rotterdam ceiling. I know of a case where the floor plan has been altered two or three times; no one has ever thought of altering the ceiling until the architect arrives on the scene and says, 'But look, you can take this panel out and put it over there'. It is as simple as that. But that had not been done.

MR. BULLOCK: The real point of my question was to ask whether Mr. Somake thinks it is a good thing to have general overall light at all times?

THE LECTURER: General light is important, but it must not be the dominating factor. Many stores are lit by general lighting alone. The other half of the story is the lighting by fixtures—spot lighting, dramatic lighting, causing contrast, glitter, shadow. All those things intermix to give a well lit shop. If you have a shop which is just covered with a grid of fluorescent tubes, it gives the dull, shadowless, morgue-like atmosphere which I mentioned in my paper.

MR. BULLOCK: In connection with windows, did I understand the lecturer to say that the lights should be high—that the actual light source should be high in order to avoid reflection from windows?

THE LECTURER: No, I am sorry. High in intensity is what I meant.

MR. BULLOCK: Has the lecturer any experience of a sloping glass window—I do not mean a window that is cut to a particular shape, but a tilting of the window inward at the top?

THE LECTURER: Yes, but you have got to tilt the window for a purpose. If you have a dark pavement and you tilt the window out at the top then you are doing something useful, because the pavement is reflecting. The angle of incidence always equals the angle of reflection with plate glass, and normally it is the sunshine which causes reflection and the pavement is usually in brilliant sunshine. Thus if you have a canopy and paint the underside of it black, you want to tilt your window the opposite way to reflect the canopy in the background. Or you can use a mixture of the two. It has been done by means of straight glass in the Owen Owen store at Coventry or by curved glass in Simpsons in Piccadilly.

MR. R. M. BURTON: The lecturer referred to the very considerable change which took place during the 1939–45 period. I think it is true that there are very few shops, designed more than twelve years ago, which are accepted as attractive and well-designed to-day (very few in this country at least). Does the lecturer feel that the change from 1939 to 1945 marks a complete step forward and that the post-war shop we now consider 'modern' will have a long life, or does he feel that the face of shop-

design is something which is constantly changing and that the shop of to-day may look odd in ten or twelve years' time? I am thinking of durability of materials: are you building a shop front to last ten years, twenty years, or fifty years?

THE LECTURER: There are two points there. First, the changes during the period 1939–45 took place in America rather than in Europe, because of the war. But in Germany and on the Continent generally there was a distinct change in the design of shops before 1939.

With regard to the second part of the question: of course, shop fronts will have to change. I do not see how one can possibly design for fifty or even twenty years ahead, because the ways of shopping change almost annually. Indeed, if self-service develops, I foresee in the not too distant future a shop which has no front windows at all—just an air-curtain doorway! All the display will be on counters inside the shop. If that happens then the shop window of to-day will disappear completely. If, on the other hand, by some miracle, we suddenly find many more shop assistants, and shopping reverts to its old leisurely tempo, then one might even slide backwards, return to arcaded fronts with lots of lobbies, so that people can virtually make up their minds what they are going to buy before they enter a shop, and then expect good service the moment they enter. Architects must design in accordance with the needs of to-day, and these are not necessarily the needs of to-morrow.

MR. H. H. BALLIN: I should like to ask Mr. Somake whether he can indicate, in general, what proportion of expenditure in the modernization of a shop is devoted to lighting? Is it true that the larger departmental store is devoting relatively very much less money to lighting because the large store has not yet succeeded in integrating general lighting and display lighting in the same way that the specialized shop has?

THE LECTURER: In general a high proportion of costs is for lighting, simply because lighting is a very expensive item. It does not appear to get cheaper the more you have of it. The more you use, the more you pay. I agree with what you say about the large store. Until the integration of display lighting is tied to general lighting the development of this facility is at a standstill. But with the increasing use of bright ceiling patterns and perimeter lighting, and the mixing of tungsten and fluorescent lamps, we are getting some very good effects. (I am sure we are also getting larger bills from the electrical contractors doing the work!)

THE CHAIRMAN: I should like briefly to develop the point I raised at the beginning of the meeting about the effect of the war on shop design. Before the war we had the architect confining himself to designing a building; we had the shop-fitting firms putting in doors and windows; we had the woodworking firms producing hundreds of fixtures that were all alike; we had lighting put in which was uniform throughout, and we allowed our managers to move the fixtures when and how they liked. That, broadly speaking, was how many of us traded before the war. Now the architect not only designs the building itself, but he also is responsible for the front and the interior, the lighting and the colour—and for the integration of all these things. This represents our biggest development in shopfitting, and I, as a client, welcome the development of Mr. Somake's profession along those lines. One final point. Mr. Somake refers to the woman as primarily the shopper. Why not bring women into his profession? It may be that they have a contribution to make in terms of colour and lighting which is beyond mere man.

And now I propose a hearty vote of thanks to Mr. Somake for a most interesting paper and discussion.

The vote of thanks to the Lecturer was carried with acclamation and, another having been accorded to the Chairman, the meeting then ended.

GENERAL NOTES

SELECTED SPEECHES OF H.R.H. THE PRESIDENT

> In peace, as in war, the followers have a great contribution to make to their country and to the cause of peace in the world generally. The ideal that my wife and I have set before us is to make the utmost use of the special opportunities we have to try to bring home to our own generation the full importance of that contribution and the effort, both at work and at play, that is required of us.

Thus H.R.H. The Prince Philip, Duke of Edinburgh, on receiving the Freedom of the City of London on 8th June, 1948. His speech on that occasion is recorded as the first in his volume of *Selected Speeches* 1948–55.* It strikes the key-note common to all those that follow, illustrating the still considerable scope for Royal initiative in the constitutional domains of encouragement and warning.

Behind the crisp readable prose one senses the training of a naval officer taught to write reports and despatches clearly and to the point. The wisecracks, the occasional asides and pointed understatements have mercifully survived any temptation to editorial revision, with the result that, for those who have not heard him speak, a life-like record is available of the lively atmosphere which emerges when he is on the platform.

Royal and common occasions are alike in one respect, that not all of them are major occasions; consequently the majority of Prince Philip's speeches reflect average occasions, as indeed a majority should. There is some interesting pith in each notwithstanding, and the collection can be read from cover to cover at a sitting without any flagging of the reader's interest.

Two of the collection are full-dress lectures and merit consideration as serious contributions to thought in fields he has chosen to study. The first is his Presidential Address at the Inaugural General Meeting of the British Association for the Advancement of Science, delivered at Edinburgh in 1951. It is a workmanlike and comprehensive review of progress in British science and industry during the century that has elapsed since the Great Exhibition of 1851. His conclusion is that lack of serious competition in the earlier half of the period bred a feeling of over-confidence and satisfaction with the methods employed. The result was a conservative attitude towards technical change and, particularly in the older industries, neglect of scientific research. Even now the rate at which scientific knowledge is being applied in many industries is too small and too slow.

His address to the New Zealand scientists at Wellington, New Zealand, during the course of the Commonwealth Tour in 1953–4, is shorter but considers allied themes in a New Zealand context.

The second set-piece lecture comprises a thoughtful and detailed analysis of the possibilities of our relatively neglected mercantile air-fleet. At a time when the aircraft industry is wondering where the next orders are coming from, its captains could do worse than study Prince Philip's thinking. He is in a position to be very well briefed and to collect information at first hand from places they are unlikely to visit.

Service occasions are among those where he concentrates on a reiterated theme—the dangers of parochialism. The defence of our Island and Commonwealth is paramount; it is an end. The division of defence into different services is utilitarian; it is a means to the end of defence; the Services are not ends in themselves:

> Sound defence depends upon co-operation and teamwork in the three Services in thought, word and deed. . . . There will always be a strong tendency to assume that any future war will start where the last one left off. We should learn our lessons from what went wrong at the beginning of the last war and not from what went right at the end of it.

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* Oxford University Press, 1957, 12*s* 6*d* net.

Prince Philip is at pains throughout to stress his professional status as a naval officer and to disclaim any standing in the field of science or humanism. The spirit of each is manifest, however, in what to the reviewer is the best speech in the collection. It was delivered to the Conference of European University Rectors and Vice-Chancellors at Cambridge in 1953 and dealt with the education of the complete man.

> With the inevitable growth of specialization I see the universities facing two great dangers. First, it is very easy to get so involved in the technical details of education that the object of education is lost. And secondly, in an effort to condition a university to the needs of its students and to the needs of the State it may lose its power to make or mould those students into reasonable and responsible men, capable of thinking for themselves and capable of expressing the result of their thoughts to others.
>
> A university must do more than merely provide a high-class professional apprenticeship. It does not matter in the least what a student's specialised line happens to be ; the fact that he is a specialist cannot excuse him from his responsibilities as a man. Students must emerge as complete human beings capable of taking their proper place in society as a credit to their universities both for their professional knowledge and as men. There is no conflict between the disciplines here. Nobody can be termed a complete man who has no knowledge of what science has to teach, and, equally, human obligations cannot be escaped on the grounds of being a specialized scientist or technologist.
>
> By human obligations I mean the ability to behave in a reasonable way, to observe restraint so that restraints do not have to be imposed, to be able to think clearly and objectively so that false doctrines cannot gain ground. I believe that it also means the ability to see through nonsense, political, economic, scientific, and so on, and the feeling that it is a duty to resist it.

These views are not original. The same sort of thing has been said by others before, and will no doubt be said again. For clarity and emphasis, however, Prince Philip's expression of them is unrivalled.

HALSBURY

ALUMINIUM STAMPING FOILS

In an issue of the Journal largely devoted to practical aspects of book production, it is appropriate to mention a new production guide on 'Aluminium Stamping Foils',[1] recently issued by the Technical Advisory Service of George M. Whiley Ltd. The use of aluminium as a substitute for silver (which is prone to discoloration) in the decoration of book-bindings is an established practice, with results described by Mr. Lewis Kitcat in his Cantor lecture on page 268 above. By employing a process of continuous evaporation, Messrs. Whiley were the first firm in this country to produce a durable and brilliant silverlike foil and, under the trade name 'Newvap', they have now begun to market a coloured aluminium stamping foil. Aluminium is the basis of this product also, the coloured effects being obtained through the use of dyes. With the reservation that its exposure to direct sunlight or ultra-violet light for long periods may cause some fading, the guide under discussion states that Newvap may 'be used with confidence for normal stamping effects'.

It is interesting to recall that at the Paris Exhibition of 1855, where the Society was officially represented, bars of aluminium were publicly shown for the first time. The metal was then described as 'silver from clay', and a breastplate from it was made for the Emperor Napoleon III, who had been much interested in its development.

'THE PICASSO MYSTERY'

'Lovers of painting get the impression, whilst watching Picasso at work and seeing the colours intermingling and the lines palpitating, that in his genius must live also the spirit of adventure.' *The Picasso Mystery*, now being shown at the Curzon Cinema, Mayfair, offers a remarkable opportunity for testing the truth of this observation by M. Henri-Georges Clouzot, who has produced and directed the film. By means

of a new technique of presentation, which entails the use of special inks on a semi-transparent canvas, the spectator can watch from the reverse side as, from the first black line to the last touch of colour, Picasso's work develops—develops apparently of its own volition, for the artist himself and his instruments remain invisible during the process of creation. Although the work of hours is condensed into 75 minutes, Picasso and M. Clouzot agreed that there should be no editing: we are admitted to the disappointments, as well as the jokes and triumphs, of composition. It is this sense of being allowed to participate that catches and excites the layman, implying, as it does, the subtlest kind of compliment to his perception.

Beginning with a series of drawings, the film progresses to water-colours and oil-paintings. As the type of picture changes, so, accommodatingly, does the screen, from black and white standard size to Eastmancolour and Cinemascope. The photography, unobtrusively skilful, is by M. Claude Renoir. Apart from remarks by Picasso himself, who appears at intervals, the only commentary is provided by the music, very various in mood, of M. Georges Auric.

HILDBURGH MEMORIAL EXHIBITION

An exhibition of the most important pieces from the collections of the late Dr. W. L. Hildburgh, F.S.A., is at present on view in the Recent Acquisitions Court of the Victoria and Albert Museum.

Since the death of George Salting in 1910, the Victoria and Albert has had no more munificent benefactor than Walter Hildburgh (1876–1955), an American by birth and a scientist by training, who came to London before the First World War and gradually acquired a splendid collection of sculpture and metalwork. Of particular importance to the Museum were his gifts of English alabaster carvings, portrait busts and terracotta sketch models. Other categories of sculpture which were enlarged as a result of his generosity and zeal included bronze statuettes (notably the Antico *Hercules and Antaeus*), bone and ivory carvings, boxwoods and ambers. Students of European metalwork (particularly that of the Spanish goldsmiths) who visit the Victoria and Albert are also indebted to Dr. Hildburgh for the bequest of the remarkably fine collection which he made in this field.

OBITUARY

We announce with regret the deaths of the following former Members of Council and Fellows of the Society:

MR. WILLIAM WILL

Mr. William Will, C.B.E., died at Dundee on 4th February, aged 91. For many years a major figure in the newspaper world, he performed a great public service during the Second World War as Chairman of the Newspaper and Periodical Emergency Council. He was a Member of Council of the Society from 1942–55.

William Will was born in Huntly and educated at the Gordon Schools. As a youth he made up his mind to enter journalism and, after gaining some experience with a local newspaper, he went to Edinburgh and studied printing under Mr. G. W. Jones (who produced the Grandjon type-face for Linotype). At the same time he continued a course of military training, which he had begun in Huntly, by attending the Heriot-Watt College and joining the Volunteer Battalion of the Royal Scots.

After an interval in Aberdeen, Will came south and joined the London staff of the (now defunct) *St. James's Gazette*. His flair for the business and administrative side of journalism was distinct, and in time he won wider opportunities for its exercise, on behalf of the group which owned the *Graphic*, the *Daily Graphic* and the *Bystander*. When Allied Newspapers Ltd., and subsequently Allied Northern Newspapers

Ltd., were formed, he was appointed a director and London manager. He was also a director and general manager of the *Daily Sketch* and the *Sunday Graphic*, and at one period chairman of the Press Association and deputy chairman of Reuters.

Will retired in 1938, but a formidable task awaited him. On the outbreak of war he willingly accepted an invitation to become Chairman of the Newspaper and Periodical Emergency Council. In this key post, Will was the link between the government departments and the Press. His primary concern was with censorship matters, but he also worked tirelessly to find acceptable solutions to the many other difficulties which inevitably arose in wartime conditions. In both the Civil Service and the newspaper world there would be general testimony to his unfailing helpfulness, his sound judgement and energy. In recognition of his labours he was made C.B.E. in 1945.

Will's manner, quiet and gentle, concealed driving force and a capacity for enthusiasm. His loyalty to Scotland found particular expression in his admiration for Robert Burns (he served for three years in succession as President of the London Robert Burns Club) and in his work for the Royal Scottish Corporation and the Royal Caledonian Schools. He was for many years closely associated with the Caledonian Society of London, as member, President (in 1924–25) and, latterly, editor of its transactions. His term of office as Master of the Stationers and Newspaper Makers Company in 1953–54 was filled with a vigour remarkable in a man of his age.

This Society had benefited from Mr. Will's help even before his election as a Fellow in 1941; and after he became a Member of Council in the following year he identified himself very closely with its interests, bringing to the office of Honorary Treasurer, from 1943–47, a special combination of acumen and experience. He was a Vice-President from 1951–54, and though he resigned from the Council in 1955, he remained an active member of the Membership and Library Committees until the summer of 1957.

SIR ALEXANDER GIBB

Sir Alexander Gibb, G.B.E., C.B., F.R.S., who died at Hartley Wintney on 21st January aged 85, was an engineer of great distinction and founder of the firm, Sir Alexander Gibb and Partners. A Fellow of the Society for 60 years, he served on its Council as a Vice-President from 1927–28, and again from 1931–35.

He was born in Yorkshire in 1872, and came of a family which had produced outstanding engineers for several successive generations. His grandfather, who was engineer of the Great North of Scotland Railway, was the pupil and friend of Thomas Telford; his great-grandfather, John Gibb, built the first railway in Scotland, and his great-great-grandfather helped to complete the Forth and Clyde Canal. The young Alexander Gibb was educated at Rugby and University College, London, and then became a pupil of Sir James Wolfe Barry. His early experience included work on the new Tower Bridge, several Scottish railways, and the Barry Docks. Later he served as resident engineer on the Metropolitan Railway portion of the Great Central Railway and on the Whitechapel to Bow Railway. He joined his father's firm, Easton Gibb and Son, in 1900, as managing director, and for some years was engaged upon a number of major undertakings, including the King Edward VII Bridge at Kew, the Alexander Docks, and a deep-lock entrance at Newport.

This work was the prelude to a very important contract secured by his firm in 1909: that of constructing the main portions of the new dockyard and naval establishment at Rosyth. Work on this huge task was still in progress when the outbreak of war made its completion a matter of extreme urgency. In the words of a public announcement made at the Institution of Civil Engineers in 1926, 'it was due to the sagacity, fortitude, and enthusiasm of Sir Alexander Gibb that the works had been

completed in time to be of immense use to the fleet during the vital period of the war'. The basin for submarines was, in fact, brought into use on 20th August, 1914; and by 25th March, 1916, vessels the size of the *Dreadnought* and *Invincible* could be berthed.

Meanwhile, Gibb's abilities had marked him out for other war service of an essential nature. He had joined the Royal Engineers in 1914, and as Chief Engineer for Ports Construction to the British Armies in France he carried out reconstruction work at Ostend and Zeebrugge. In 1918 he became Civil Engineer-in-Chief to the Admiralty, and in 1919 Director-General of Civil Engineering to the Ministry of Transport. In recognition of his work in these posts he was made C.B. and K.B.E. in 1918, and advanced to G.B.E. in 1919.

Gibb returned to private practice in 1921, and in the succeeding years his professional reputation grew international. He was consulting engineer to the Admiralty for the Singapore Naval Base, to the Persian Government and to the Government of Columbia. On behalf of the Canadian Government in 1931–32, he performed the feat of surveying, in less than a year, the national ports and making recommendations in respect of their facilities and administration. In 1937 the Ish Bank of Istanbul engaged him as their technical adviser for public works and industrial development in Turkey. During the Second World War he was consulting engineer for the new dock at Sydney, Australia. More recently, in 1955, Sir Alexander Gibb and Partners contracted with the Egyptian Government for work on the Aswan Dam.

In England, Gibb's skill was put to the service of many public and professional bodies including, amongst the former, the Treasury, the Dean and Chapter of St. Paul's and the Royal Fine Art Commission. He was elected a Fellow of the Royal Society in 1936, and was a Member of the Queen's Bodyguard for Scotland. Many people whose interest in Thomas Telford was revived by last year's bicentenary exhibition (see *Journal*, 16th August, 1957, p. 793) might read, with equal profit and pleasure, Gibb's biography of him, published in 1935 under the title *The Story of Telford—The Rise of Civil Engineering*. A comparison of Gibb with the great engineer would not be unjust.

MR. A. B. HUNTER

Mr. Alec Butler Hunter, President of the Society of Industrial Artists, died at Cambridge on 10th January, aged 58.

The following is extracted from an appreciation by Sir Ernest Goodale which appeared in *The Times* of 14th January:

> Hunter was a fine craftsman all his life. The son of Edmund Hunter, a contemporary of Luther Hooper, they plied their trade as weavers first at Haslemere in Surrey and then at the St. Edmundsbury Works at Letchworth. There the Hunters produced some lovely fabrics for the West End trade and came under the notice of that great man in textiles, Sir James Morton, who persuaded them to join him and establish the branch of the Morton organization known as Edinburgh Weavers.
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> Here the Hunters, father and son, were able to produce some of the lovely furnishing materials in which they delighted, and when Alec Hunter joined the firm of Warner & Sons Limited at Braintree in Essex some few years later—in 1932—he brought with him an originality of mind, an integrity of craftsmanship and a genuine love of textiles that were to make his stay there until his death a memorable one.
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> His integrity in all matters relating to design, his intolerance of the second rate, resulted in his being consulted in many ways. For some years he was a Visitor to the weaving department at the Royal College of Art, and only last year was appointed to the governing Council. He was assisting the annual Bursaries Competition of the Royal Society of Arts, and above all, his work for his own professional body—the Society of Industrial Artists—was outstanding. For several years directly after the war, his wise guidance as Chairman of the Development Committee when the Society was being reformed, was of immense help, and during his recent one and a half years

as President of the Society he did not spare himself in promoting the cause of good design and the practitioners thereof.

Hunter was an accomplished painter in water-colours, and an outstanding folk-dancer, who led and inspired a well-known team of Morris dancers. Closely associated with Cecil Sharp House for a number of years, he served on the National Executive Council of the English Folk Dance and Song Society from 1925–27, and again from 1951–57.

Mr. Hunter was elected a Fellow of this Society in 1947. In 1948 a stimulating paper by him on 'The Craftsman and Design in the Textile Industry' was read (in his absence, owing to illness) by Mr. (now Sir) Ernest Goodale. At the time of his death, Mr. Hunter was a member of the Furnishing Textiles Section Jury of the Industrial Art Bursaries Competition, and of the Industrial Art Bursaries Board. His knowledge and enthusiam will be greatly missed in this sphere of the Society's work.

MR. C. W. DYSON PERRINS

Mr. Charles William Dyson Perrins, who died on 29th January at the age of 93, was known as a benefactor and collector of great discernment.

He was born on 25th May, 1864, and educated at Charterhouse and Queen's College, Oxford. After serving for four years in the Highland Light Infantry, he joined the family business of Lea and Perrins, retail chemists in Malvern. Lea and Perrins manufactured the famous Worcester sauce, and from its sales Charles Dyson Perrins acquired the great fortune which enabled him to collect books, manuscripts, china and drawings on a splendid scale. Whilst still a young man he began to seek the illuminated manuscripts and incunabula which he steadily enlarged into one of the finest private collections in England. He achieved what was perhaps his most striking single success as a bibliophile in 1906, when he purchased the entire library of Richard Fisher, of Midhurst, just before it was due to be auctioned.

Dyson Perrins also built up a magnificent collection of Worcester china, and his interest here proved of immense benefit to the Worcester works. For when the factory was in financial difficulties in the 1920s, he took over its management, and kept it working, in spite of the resultant drain on his own resources. After the Second World War, he sold his printed books (for £147,627), and devoted the greater part of the proceeds to re-equipping the factory so that its wares might continue to be celebrated for their excellence and beauty.

Dyson Perrins was especially respected in his native county. He had served as Mayor of Worcester in 1897, and as High Sheriff of Worcestershire in 1899. A shrewd man of business as well as a connoisseur, generosity and discrimination played an equal part in his benefactions. When he judged that a cause was good, he gave to it without stint—and without ostentation.

Mr. Dyson Perrins was elected a Life Fellow of the Society in 1900.

NOTES ON BOOKS

THE BAYEUX TAPESTRY: A COMPREHENSIVE SURVEY. *By Sir Frank Stenton (General Editor), Simone Bertrand, George Wingfield Digby, Charles H. Gibbs-Smith, Sir James Mann, John L. Nevinson and Francis Wormald. London, Phaidon Press, 1957. 47s 6d net*

Though the famous wall hanging at Bayeux Cathedral is embroidered not woven, the learned authors of this definitive account have retained the name 'tapestry', by which it is so generally known. This concession to popular terminology is appropriate to a work that has such a strong and enduring appeal that both Napoleon

and Hitler thought of it as a possible medium of propaganda for the invasion of England. Its own history is as striking as the story it tells, and its survival, wonderfully unimpaired despite various renovations and intact except for the two final scenes, can only be equalled, as an instance of durability, by that of the Raphael cartoons, and they, though their function entailed more drastic treatment, are younger by some four hundred years. Much has been written about it, and doubtless much more is to come, but this splendid Phaidon publication puts the various problems connected with it on a new and much surer footing. The excellent photographs specially taken by Mr. Percy Hennell must be given pride of place, for existing photographic reproductions are based on a set taken in 1871, admirable negatives for that date but lacking the advantage of more recent techniques. With our increased understanding of Anglo-Saxon drawing, for which Professor Wormald is so largely responsible, we can to-day appreciate much more readily the aesthetic virtues of the Tapestry and, particularly in the colour plates, it can now be enjoyed, as is the case with much medieval work, more easily in the reproductions than in the original, even allowing for the loss of that continuity in subject and rhythm that only the perambulation of the actual Tapestry can give. Observed at leisure the dramatic power of the design comes out very strongly and there is a large range of expressive pose and gesture. Needlework is not a medium for subtle effects, but here there is little sense of its limitations, and the designer and the executants must have had a most practised familiarity with their craft.

Sir Frank Stenton and his collaborators agree in the view that the Tapestry had as one of its aims the glorification of the relics of Bayeux, and that Harold's downfall is the inevitable divine punishment for having sworn falsely upon them. It is, however, as Stenton points out, treated as an epic story. Harold may be sacrilegious and perjured, but he remains a heroic figure, and he is represented throughout as a worthy opponent. The portrait of him at the opening of the Tapestry, riding with his hawk on his wrist, is a more sympathetic rendering than any of those of William, and the end, as one by one Harold's supporters fall around him till he himself is struck down, is the tragic denouement of a saga and no mere piece of prejudiced propaganda. The importance of the relics, the emphasis on Bayeux and on Bishop Odo, the provenance of the Tapestry all bear out the view, now generally accepted, that it was commissioned by Odo for his cathedral. On the whole the authors of the present volume lean to the view that it is of English workmanship. Stylistically it certainly belongs to the Anglo-Saxon school, but so to a large extent did the book illuminations of Normandy, where English artistic influences had been dominant through the eleventh century. In colouring the Tapestry recalls Anglo-Norman rather than Anglo-Saxon work. With no survivals of comparative textile material, this is a question that can probably never be answered, and it is not one of much moment. By 1100 there was a Channel style, and this is one of its great masterpieces. In this volume its meaning, style, technique, its representations of armour and costume, and its later history are examined by a band of experts, whose united qualifications are little likely to recur in such co-operation for many years to come. It is particularly fitting that this most satisfactory book should have been produced with the assistance of the Pilgrim Trust and that it should be dedicated to the memory of Dr. Horowitz, founder and director of the Phaidon Press.

T. S. R. BOASE

AESTHETICS. *Lectures and Essays by Edward Bullough. Cambridge, Bowes & Bowes,* 1957. 30s net

The late Edward Bullough, in addition to holding the chair of Italian and teaching French, Russian and German in the University of Cambridge, began, in 1907, to deliver the first course of lectures in Aesthetics to be given in Cambridge. Such

well-stocked minds are rare and in his case there is no temptation to think that too wide a field of knowledge is the mark of a dilettante. In addition, a more than superficial interest in psychology gave a necessary twist to his writings on Aesthetics.

This book, which carries the courageously comprehensive title *Aesthetics*, is a reprint of three of his most thoughtful essays. The first, 'The Modern Conception of Aesthetics', is an attempt to define the meaning of the word as an outlying branch of philosophic thought and to fix the limits within which it can be usefully pursued. The second, 'Psychical Distance', deals, in considerable detail, with the attitude of mind that distinguishes the aesthetic approach from the practical, the scientific and the ethical—categories derived, ultimately, from Schiller, which make clear Bullough's debt to German philosophy. The third is a contribution to a symposium, published in the *British Journal of Psychology*, on 'Mind and Medium in Art', and is less important.

The value of the first of these essays consists chiefly in its clearing away of the dead wood that encumbered aesthetic thinking when it was written. It admirably defines what aesthetics is not, and not quite so admirably answers the arguments that (*a*) Aesthetics is a useless study and that (*b*) it proposes to answer a set of unanswerable questions. Here Bullough's very clarity of thought and expression reveals some of the limitations of his own arguments. For example, his contention that the relationship between Aesthetics and art criticism is exactly paralleled by that between Physiology and Medicine is so clearly put that a doubt at once arises as to the validity of the analogy. Aesthetics, as a science, can only be based on the examination of a vast number of aesthetic experiences: it *must* generalize from the particular. And the particular is the province of the art critic. Physiology, on the other hand, can and must exist in its own right without assistance from Medicine.

Bullough, however, would have been the first to admit that only by a profound analysis of the states of mind of exceptionally sensitive men in the presence of 'beauty' can Aesthetics come into being at all: and that such sensitivity is rarely found in conjunction with the faculty for philosophic analysis. The idea, to which he is inclined to cling throughout this essay, that 'beauty' is the core of the aesthetic problem, is one which, I suspect, he might have modified had he been writing to-day, when 'expression' and 'communication' begin to seem better adapted to philosophic argument.

The second essay is, in fact, less dependent on preconceptions about 'beauty'. What he calls 'Psychical Distance'—the refusal to stand close enough to the aesthetic stimulus, work of art, scene or event, to become morally or actively involved in it or by it—is something that I myself would rather call 'the contemplative attitude'. The idea of 'distance' tends to entangle him in a metaphor that sometimes obstructs the progress of his thought. Yet the drift of his argument is clear enough and it is in this essay that he comes nearest to the heart of the main problem of Aesthetics and contributes most usefully to its solution.

Aesthetics, if it is a science at all, can never be an exact science since it is based on the examination of a set of human emotions. What matters is that aestheticians should know, as Bullough knows, that it is concerned with 'thinking about feeling'. That places it firmly on the difficult frontiers between psychology and philosophy.

ERIC NEWTON

THE FOCAL ENCYCLOPEDIA OF PHOTOGRAPHY. *London, Focal Press.* 105*s net*

'Of making many books there is no end' might be said of the multiplicity of new publications of the present day; but here is a genuine attempt to cover the whole range of photography in one huge volume. '*The Focal Encyclopedia* can take the place of a photographic library and no library is complete without it'.

Conceived ten years ago, this publication was intended to cover an adequate range

of history and development, of techniques and processes of profit to readers with an active interest in the subject. But in the making the book has grown in size and scope; 300,000 words have been increased to 1,250,000, and over 200 independent authorities have contributed. Emphasis is laid on British practice and outlook, but different national aspects are also defined by writers from nearly every country in the world. These authoritative articles, marked with the initials of the contributors, have not been coloured by the opinions of the editorial board, as the job of the editor lay merely in ensuring a uniform manner of presentation. On the other hand, in order to check the fallibility of experts, some fifty specialists have been brought in as a measure of precaution, and there are numerous cross references from one article to another of the 2,000 entries.

It is not intended that anyone should read right through the 1,468 pages, and so there is a guide enabling the reader to pick out the sections which chiefly interest him. The volume may be considered in departments connected with optics, chemistry of photography, processes, pictorialism, and so on; and all the fundamentals are treated at some length in general in self-contained articles. A very long section is concerned with the 'Discovery of Photography', and includes a broad introduction to the history and development of photography. There are over four pages dealing with the chronology of inventions.

One special feature of Focal Press publications in general is the publisher's technique of diagram production, which always follows a now familiar pattern. Cameras are illustrated in all views so that they become easily recognized shapes at all angles. Processes are revealed in detail from one stage to the next pictorially, so that the veriest tyro can follow the procedure with confidence.

The profuse illustrations, on art paper, are divided into 23 groups. This not only simplifies the task of binding, but also brings together in small compass a particular application of the art.

Particular emphasis is laid on biographies of those who have made their mark on certain facets of photography all over the world. Over 250 articles supply information about the careers and achievements of these early experimenters. No living photographer is included in this category, since it is not possible to assess the claim of those whose work still continues to the attention of posterity.

A section of great interest, headed 'Pictorial History', includes about 40 prints which show the results obtained by those whose names are bywords—and it is fascinating to notice how the ideas of last century with regard to composition and general treatment are still in favour to-day. It is also worth remembering that these results were obtained with sensitive materials very poor compared with those available at the present day.

For the scientist, the pictorialist, the historian of photography, the technician, or even for the ordinary layman, there can be no more useful volume than this. It costs five guineas, but can take the place of very many smaller volumes, each devoted to some one aspect of photography and whose total cost can very easily exceed ten times that amount.

E. W. M. HEDDLE

FROM THE JOURNAL OF 1858

VOLUME VI. *26th March*, 1858

COPYRIGHT IN THE ARTS

In December, 1857, the Society appointed a Committee (of which Sir Charles Eastlake was Chairman) to inquire into the subject of copyright in works of the fine arts. The principal objects of the Committee were to ascertain the chief defects of the then existing copyright laws and to propose remedies therefor. The following were the Committee's principal resolutions:

1. The chief object it is desired to effect by the Amending Act, is to secure a Copyright for the Author's life, and 30 years after, for such of the designs of an artist as he may himself have conceived, and as have been produced by his own hands, or by those of his assistants, and as he may himself have signed or marked, so as to claim Copyright for.

[These would be the works of which the artist's own brain may be considered as the inventor and primary source, and would include all, however first embodied; and whether they profess to be portraits of men or things, or the products of imagination: and will apply especially to the works of

Painters and Designers,
Sculptors and Die Engravers,
Architects.]

2. The next object desired is, to secure protection for a like period of works of Art of a more imitative character, and not necessarily embodying original design, and to prevent these being used by strangers as a means or basis for reproducing others like them, to be sold in competition with themselves.

[This will include the case of the piratical use by one engraver or photographer of the work of his rival, in order to make repetitions from, while it leaves the original design or other source open to both parties, and will apply principally to

Engravers,
Photographers,
Plaster, etc., cast makers

E.g.—Mr. Doo may choose to engrave an old National Gallery picture. Any other engraver may go to the picture and engrave another, but he has no right to use Mr. Doo's engraving to produce it from. So with a photographer who may travel to the Holy Land, and bring back photographs. Others ought not to use his, though they may also go to the Holy Land and get the same subject there.]

3. The third object desired is, to secure, for a like period, Engravers against plates which have been engraved by them, and bear their name, being touched over and altered by others, and then re-issued with the engraver's name still on them.

4. It is desired to extend (as was done for authors in 1842) the Copyright above contemplated, to all the past works of living artists which they have still in their possession; and also to those which they have parted with, provided they obtain the consent of the proprietor, and affix their name or monogram.

QUALIFICATION ON THE COPYRIGHT ABOVE PROPOSED

1. As to the architectural plans, models, etc.: only the use of the originals to be secured; but not to prevent new drawings, etc., being taken from executed buildings or works.

2. As to sculpture: only to prevent the publishing of copies, casts, engravings, etc., purporting to represent or reproduce the original design as the sole or chief end of the publication.

[*E.g.*—No stranger ought to engrave one of the statues at the entrance of the House of Lords as a work *per se*. While a picture of the whole scene, including the set of statues as incidents, would be within the rule known as to Copyright books, permitting legitimate extracts not being competitions with the original work or design.]

Some Activities of Other Societies and Organizations

MEETINGS

TUES. 25 FEB. International Affairs, Royal Institute of, 10 St. James's Square, S.W.1. 1.30 p.m. Commander The Rt. Hon. Allan Noble: *Britain at the United Nations.*

Metals, Institute of, 17 Belgrave Square, S.W.1. One-day symposium : *Metallurgical aspects of semi-conductors.*

WED. 26 FEB. Analytical Chemistry, Society for, at Burlington House, W.1. 5 p.m. Bernard Dyer memorial lecture. Sir Hugh Linstead : *Science and politics.*

The Building Centre, 26 Store Street, W.C.1. 12.45 p.m. Film Show : *The titanium pigment story.*

Radio Engineers, British Institution of, at School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. 6.30 p.m. C. Powell : *Dectra : a long-range navigational aid.*

THURS. 27 FEB. Chemical Society, at King's College, Strand, W.C.2. 7.30 p.m. Liversidge Lecture. Professor R. G. W. Norrish : *Some isothermal reactions of free radicals studied by kinetic spectroscopy.*

Works Managers, Institution of, at Royal Society of Arts, W.C.2. 7 p.m. Dorian Williams : *Problems of speaking in public.*

FRI. 28 FEB. Royal Institution, 21 Albemarle Street, W.1. 9 p.m. Leon Radzinowicz : *Changing attitudes towards crime and the devices used to combat it.*

SAT. 1 MARCH. Interplanetary Society, British, at Caxton Hall, S.W.1. 6 p.m. Professor G. A. Whitfield : *The guidance and control of long-range vehicles.*

TUES. 4 MARCH. British Architects, Royal Institute of, 66 Portland Place, W.1. 6 p.m. Sir John Wolfenden : *The architect's rôle in society.*

British Decorators and Interior Designers, Incorporated Institute of, at The British Colour Council, 13 Portman Square, W.1. 7 p.m. H. A. Thomas : *Recent developments with man-made textiles, with particular reference to carpets and furnishing fabrics.*

Central Asian Society, Royal, at Burlington House, Piccadilly, W.1. 1.30 p.m. G. L. Lewis : *Turkey to-day.*

WED. 5 MARCH. Carriage and Automobile Manufacturers, Institute of British, at Royal Society of Arts, W.C.2. 7 p.m. A. W. Braite : *Anadized aluminium body trim.*

Kinematograph Society, British, at Shell-Mex House, W.C.2. 7.15 p.m. K. K. Rick : *Production of film commercials.*

Victoria and Albert Museum, S.W.7. 6.15 p.m. C. H. Gibbs-Smith : *The Bayeux Tapestry.*

THURS. 6 MARCH. Metals, Institute of, 17, Belgrave Square, S.W.1. 6.30 p.m. B. E. Hopkins : *High purity iron.*

Preceptors, College of, 2/3 Bloomsbury Square, W.C.1. 7 p.m. Sir Ronald Gould : *The teacher and the three-year course.*

Refrigeration, Institute of, at Pepys House, Rochester Row, S.W.1. 5.30 p.m. Monsieur P. Vidal : *Modern trends in cold store design and operation in France.*

Graves Art Gallery, Sheffield. 7.15 p.m. C. F. Wingfield Digby: *Blake—the symbolist.*

FRI. 7 AND TUES. 11 MARCH. University of London, at University College, Gower Street, W.C.1. 5.30 p.m. Professor Sven B. F. Jansson : *Runology.*

MON. 10 MARCH. Geographical Society, Royal, 1 Kensington Gore, S.W.7. 8.30 p.m. Professor P. M. S. Blackett : *Rock magnetism as evidence of continental drift.*

Transport, Institute of, at 66 Portland Place, W.1. 5.45 p.m. D. M. Sinclair : *Relations in industry.*

TUES. 11 MARCH. Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 6 p.m. G. Grime : *The inspection of vehicles for roadworthiness.*

THURS. 13 MARCH. Analytical Chemistry, Society for, at the Gas Showrooms, Nottingham. 7 p.m. W. B. Smith : *The analytical chemistry of synthetic detergents.*

Chemical Society. Burlington House, W.1. 7.30 p.m. Centenary Lecture. Professor Dr. W. Klemm : *Metalloids and their compounds with the alkali metals.*

Kinematograph Society, British, at Royal Society of Arts, W.C.2. 7.15 p.m. J. K. Byers : *Operation of a sound transfer suite for television films.*

Royal Society, Burlington House, W.1. 10.30 a.m. Discussion : *The physiology and biochemistry of lactation.*

FRI. 14 MARCH. Royal Institution, 21 Albemarle Street, W.1. 9 p.m. H. S. W. Massey : *Artificial satellites.*

Water Treatment and Examination, Society for, at 90 Buckingham Palace Road, S.W.1, from 9.30 a.m. to 5.30 p.m. P. Hamer : *Boiler water treatment.* Symposium on Spectrography and Chromatography. Dr. S. Buchan : *Variations in mineral content of some ground waters.*

TUES. 18 MARCH. Anthropological Institute, Royal, at Burlington House, W.1. 5.30 p.m. Professor I. Schapera : *Christianity and the Tawana.*

WED. 19 MARCH. Victoria and Albert Museum, S.W.7. 6.15 p.m. Jonathan Mayne : *Victorian painters of contemporary life.*

THURS. 20 MARCH. Preceptors, College of, 2/3 Bloomsbury Square, W.C.1. 7 p.m. Dr. W. P. Alexander : *Recasting the training college.*

FRI. 21 MARCH. Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 6 p.m. Dr. E. Schmidt : *High-speed high-performance diesel engines : their development and application.*

Royal Institution, 21 Albemarle Street, W.1. 9 p.m. Cyril Dean Darlington : *The control of evolution in man.*

THURS. 27 MARCH. Preceptors, College of, 2/3 Bloomsbury Square, W.C.1. 7 p.m. Dr. W. R. Matthews : *The purpose of training.*

OTHER ACTIVITIES

MON. 24 FEB. UNTIL 30 FEB. Imperial Institute, S.W.7. Mon. to Fri., 12.30 p.m. and 3 p.m. Sat., 3 and 4 p.m. Sun., 3, 4 and 5 p.m. Film Shows : *Traders in Leather*—Nigeria. *Powell River Story*—Canada.

NOW UNTIL 2 MARCH. Imperial Institute, S.W.7. Mon. to Fri., 10 a.m. to 4.30 p.m. Sat., 10 a.m. to 5 p.m. Sun., 2.30 p.m. to 6 p.m. Exhibition : *Paintings and drawings by Mary Filer.*

TUES. 11 MARCH UNTIL THURS. 13 MARCH. Oil and Colour Chemists' Association, at The Royal Horticultural Society's New Hall, Greycoat and Elverton Streets, S.W.1. Tues., 3 p.m. to 7.30 p.m. Wed. and Thurs., 10 a.m. to 7.30 p.m. Technical Exhibition 1958 of Raw Materials and Equipment used in the Paint, Varnish and Printing Ink Industries.

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We hereby propose and recommend the above Candidate as a fit and proper person to become a Fellow/an Associate Member of the Royal Society for the Encouragement of Arts, Manufactures and Commerce.

Signatures of three fellows, at least one of whom must sign on personal knowledge :

Name in Block Capitals — Signature

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(on personal knowledge)

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[.....] .....

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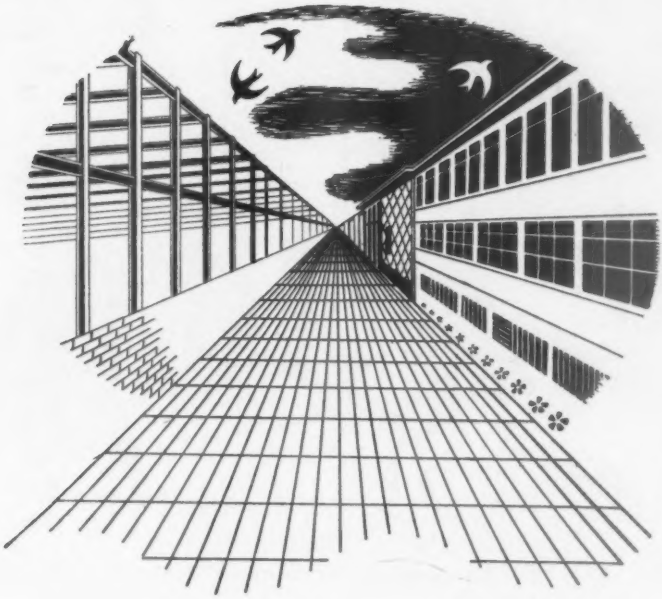

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